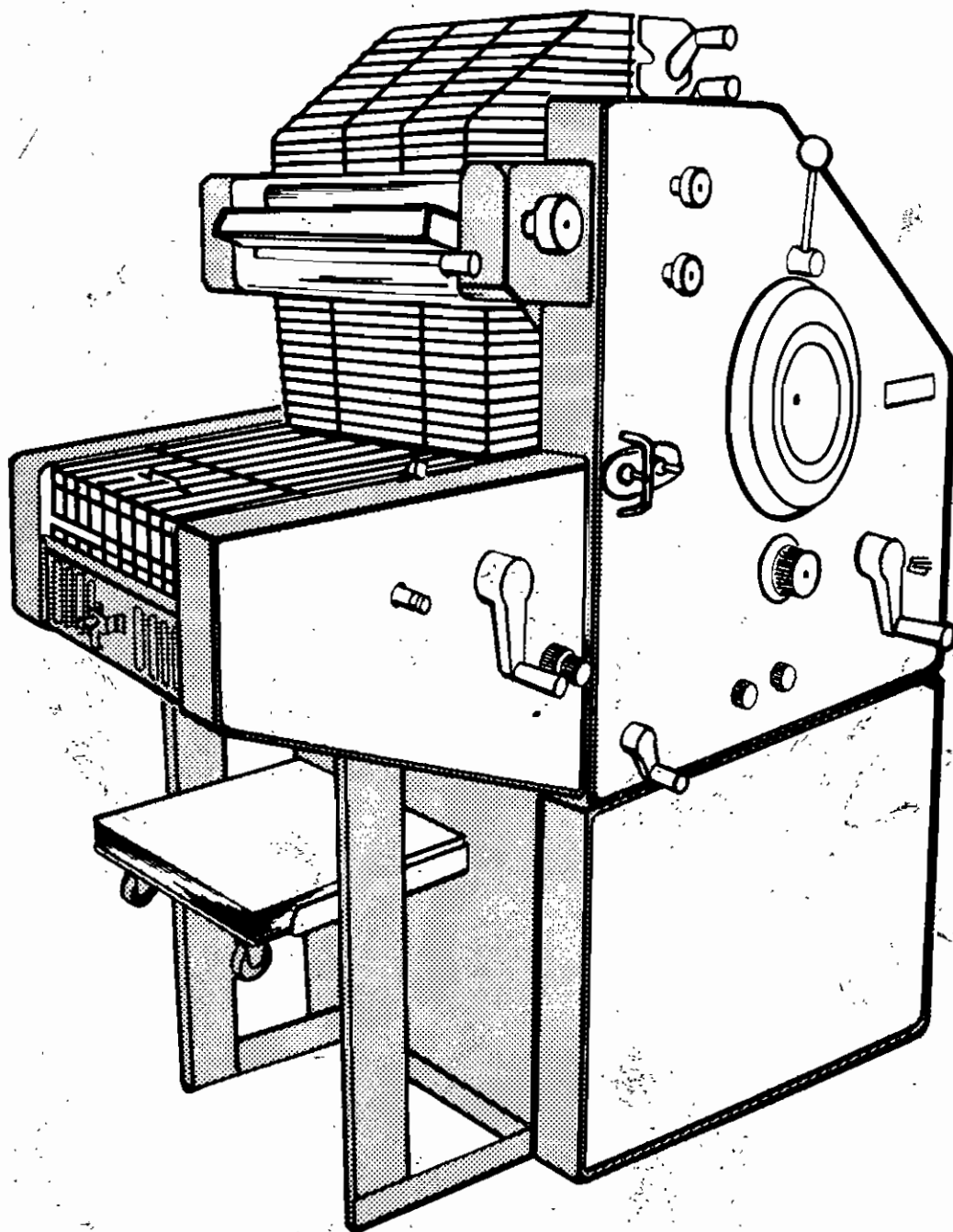


MODEL 8820 OFFSET DUPLICATOR



OPERATING INSTRUCTIONS

ABDICK®

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P/N 010033

WARNING:

THIS EQUIPMENT MUST BE CONNECTED TO A PROPERLY GROUNDED THREE (3) WIRE OUTLET. FAILURE TO DO SO CREATES A POTENTIAL DANGER OF ELECTRICAL SHOCK.

THE CIRCUIT TO WHICH THIS EQUIPMENT IS CONNECTED MUST BE CURRENT PROTECTED BY A DEVICE WITH SUITABLE CURRENT INTERRUPTION CAPABILITY AS REQUIRED BY UNDERWRITERS LABORATORIES, CANADIAN STANDARDS ASSOCIATION, N.E.M.A. OR LOCAL CODE (WHICHEVER IS THE MOST STRINGENT).

THIS EQUIPMENT MUST NOT BE OPERATED WITH SAFETY COVERS AND/OR ELECTRICAL INTERLOCK SYSTEMS BY-PASSED OR MADE INOPERATIVE.

IMPORTANT NOTICE

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Chicago, IL 60648



TABLE OF CONTENTS

Safety Precautions/Introduction	2
Principle of ABDICK Offset	3
Operation Control Lever	4
Identification of Controls	5
Morning Setup	
Night Latches	6
Paper Feed	7
Paper Stack Height	9
Air and Vacuum	10
Buckle Control	11
Chain Delivery and Receding Stacker	12
Inking	17
Fountain Solution	18
Producing Copies	
Attaching a Master	19
Sequence of Operation	20
Copy Adjustments	21
Impression Cylinder Adjustment	22
Shutdown	
Idle Periods During the Day	23
Nightly	24
Weekly	26
Tips for Running Special Jobs	
Envelopes, Postcards, Punched or Perforated Stock	27
Color Work	27
Two-sided Work	27
General Maintenance	
Removing and Attaching the Blanket	28
Care of Offset Blankets	29
Care of the Roller and Cylinder System	30
Maintenance of Aquamatic Rollers	32
The ABDICK Maintenance Agreement	33

Safety Precautions

This equipment presents no hazard when used properly; however, certain safety rules should be observed when operating the duplicator:

1. Read this manual carefully and follow recommended procedures.
2. Keep hands, hair and clothing clear of rollers, cylinders and other moving parts. Don't wear any jewelry or loose fitting clothes.
3. Wear safety glasses.
4. Safety covers must be closed before turning "ON" the duplicator. Safety covers must not be removed.
5. Always turn "OFF" the duplicator before making adjustments and, when possible, cleaning the duplicator.
6. Disconnect the power cord before making adjustments and when cleaning or performing any maintenance not covered in this manual.
7. Read and follow all cautions and statements on the labels of the supplies you use.
8. Pay special attention to all WARNINGS, CAUTIONS, and NOTES in this manual.

WARNINGS, CAUTIONS, and NOTES each have specific purposes. Disregarding a NOTE will cause you inconvenience. Disregarding a CAUTION may cause equipment damage. Disregarding a WARNING may cause personal injury.

Introduction

The 8820 is designed and manufactured to provide the user an economical method of obtaining high quality printed copies. When operated and maintained as intended, your unit will produce excellent results over many years of service.

The 8820 is capable of feeding a wide variety of impression paper, envelopes, and card stock, due to its highly efficient air and vacuum control system. Excellent ink coverage over a wide variety of originals is obtained as a result of the twelve roller ink system. The integrated ink and water system allows the operator to produce excellent results with minimum training.

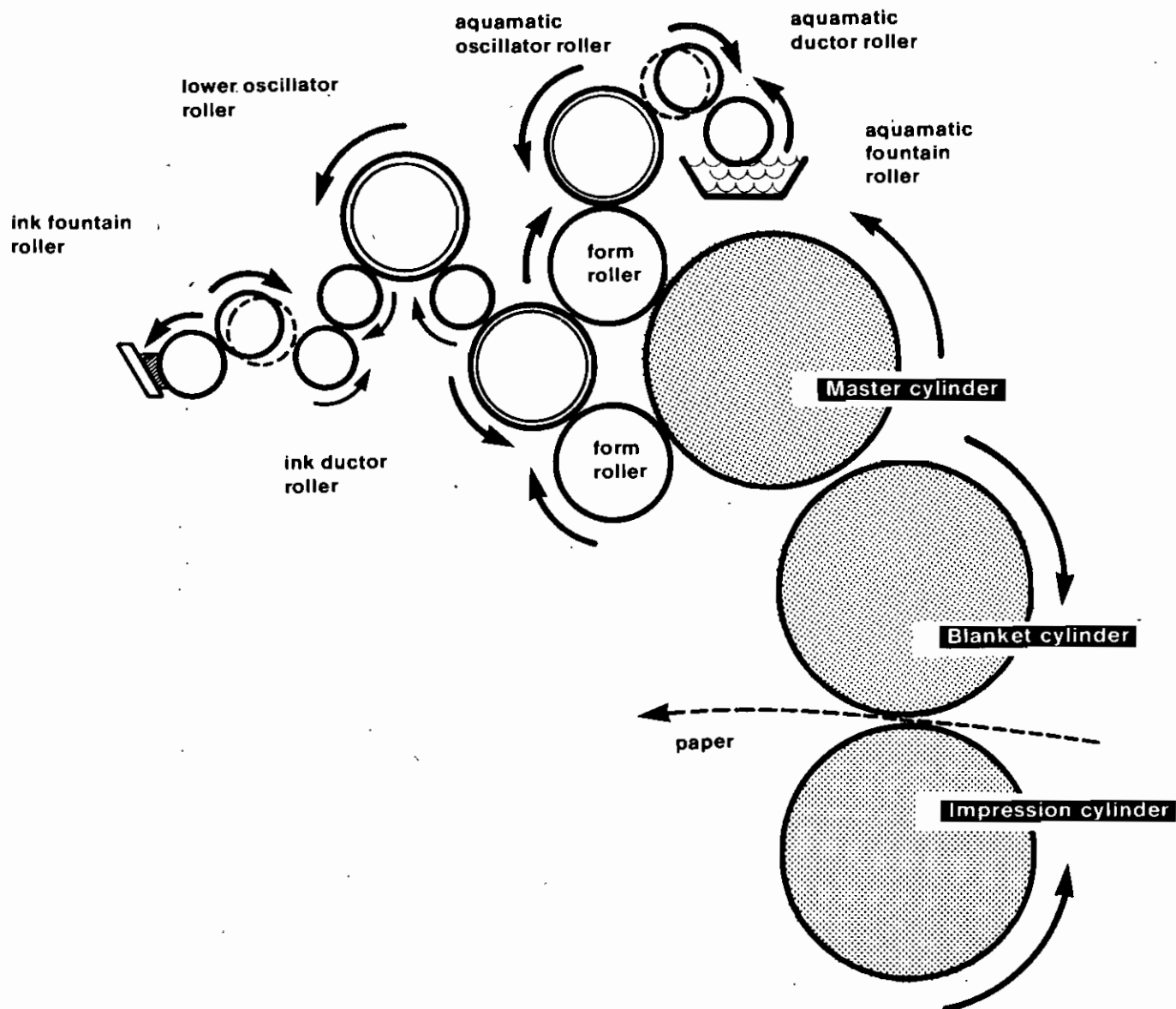
Please take a few minutes to review the Operating Instructions and refer to it whenever the need arises.

Principle of A.B. Dick Offset

The roller system of your duplicator is designed to transport a balance of ink and water to the master or plate. All twelve (12) rollers must be covered with ink; the ink then carries the water on its surface. First, ink is supplied to the rollers from the ink fountain and then water is supplied from the water (or Aquamatic) fountain. The system of rollers (carrying both ink and water) supply water to the non-image area and ink to the image area of the master or plate.

The master or plate is attached to the master cylinder. The two rollers carrying ink and water to the master are called the Form Rollers. As the cylinders rotate, the ink from the image area of the master is transferred (offset) to the blanket cylinder. The image appears in reverse on the blanket.

As paper passes between the blanket and impression cylinders, the impression cylinder applies pressure upward to press the sheet of paper against the blanket cylinder. The ink image on the blanket is then transferred to the paper.



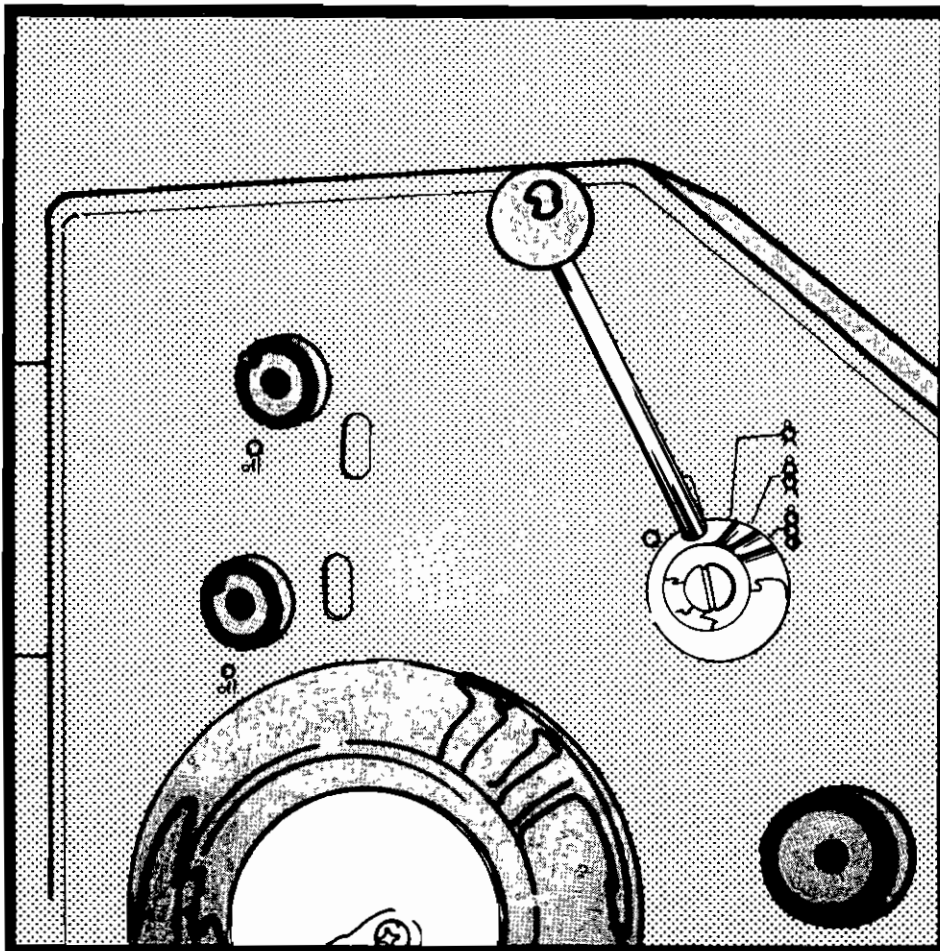
Operation Control Lever

The Operation Control Lever has five (5) positions:

- NIGHT LATCH** - Eliminates pressure between the rollers during idle periods.
- NEUTRAL** - The roller system is prepared to deliver ink to the master. All rollers contact each other but do not contact the master cylinder.
- INK** - Permits the two (2) Form Rollers to cover the image area of the master with ink.
- IMAGE** - Ink is transferred from the master to the blanket.
- FEED** - Turns "ON" the Paper Feed to permit paper to be fed into the machine.

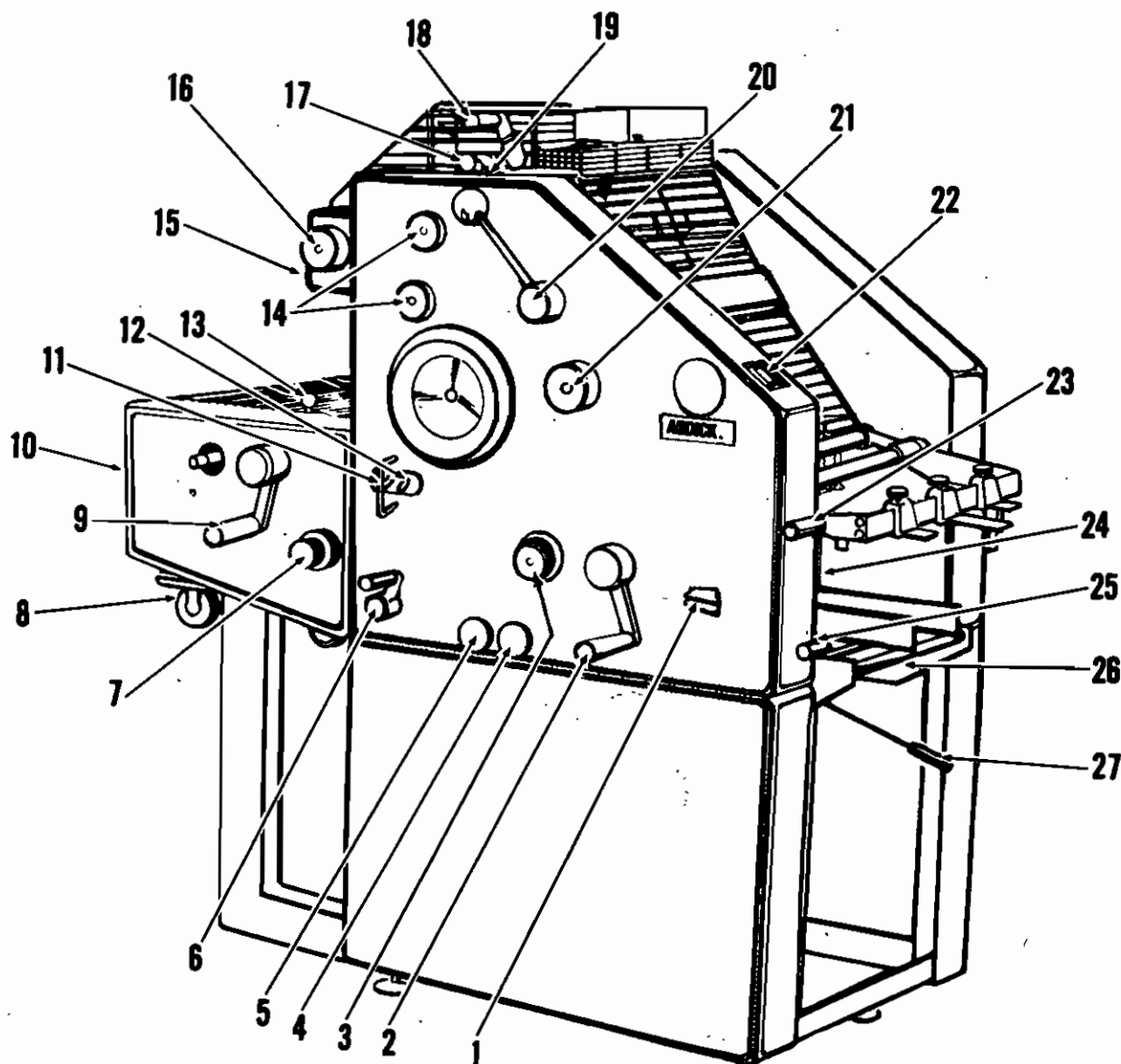
NOTE:

THE PAPER FEED MAY BE TURNED "OFF" BY RETURNING THE OPERATION CONTROL LEVER TO THE NEUTRAL POSITION.



Identification of Controls/Components

- | | | |
|------------------------------|-------------------------------|--|
| 1. Table Release | 10. Backstop Adjusting Knob | 19. Aquamatic Control |
| 2. Paper Elevator Crank | 11. Motor Drive Switch | 20. Operation Control Lever |
| 3. Buckle Control | 12. Vacuum Pump Switch | 21. Raise/Lower Adjusting Knob |
| 4. Vacuum Control | 13. Receding Control Lever | 22. Copy Counter |
| 5. Air Control | 14. Form Roller Control Knobs | 23. Paper Feed Control |
| 6. Speed Control | 15. Ink Control Lever | 24. Dual Feed Speed Control (inside frame) |
| 7. Backjogger Adjusting Knob | 16. Ink Fountain Roller Knob | 25. Paper Stack Height Adjustment |
| 8. Receiving Dolly | 17. Aquamatic Lockout Latch | 26. Feed Table |
| 9. Raise/Lower Crank | 18. Aquamatic Night Latch | 27. Paper Guide Lock |



1. Lift the safety cover over the ink rollers.

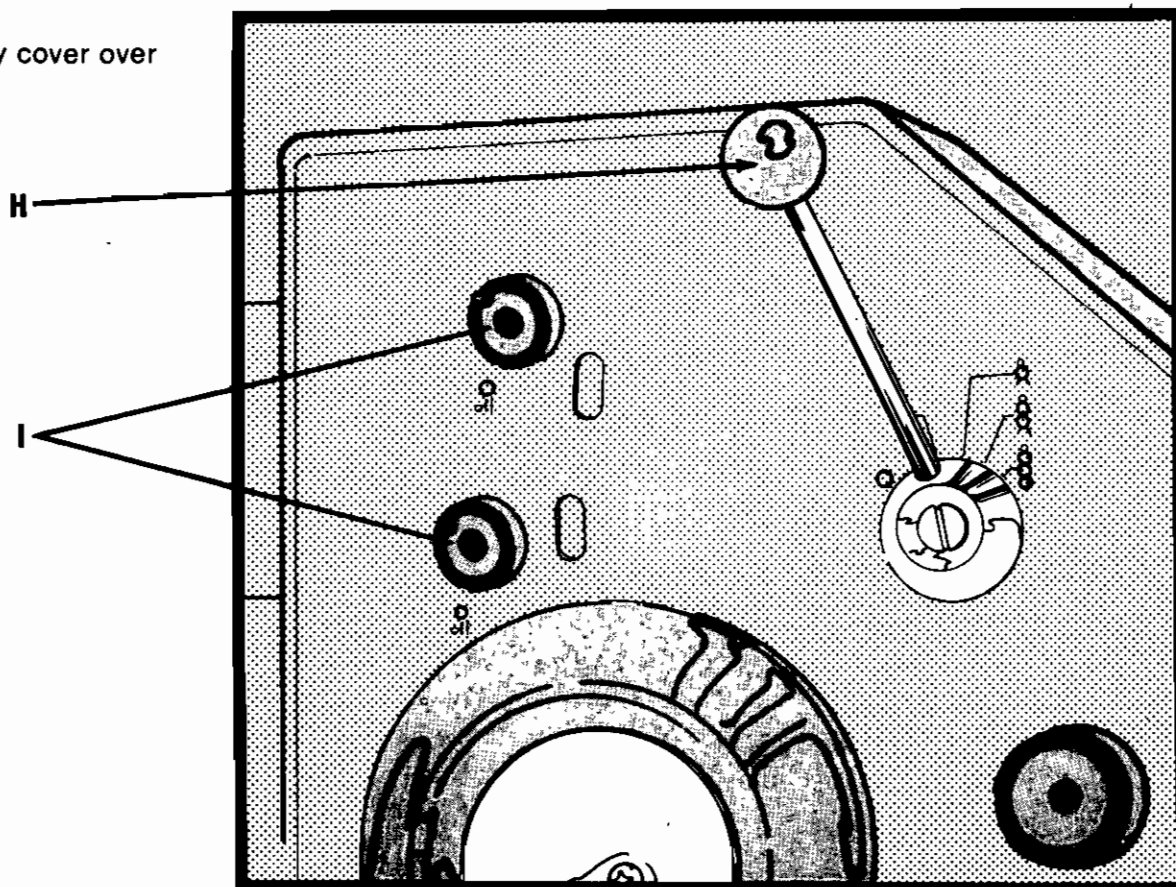
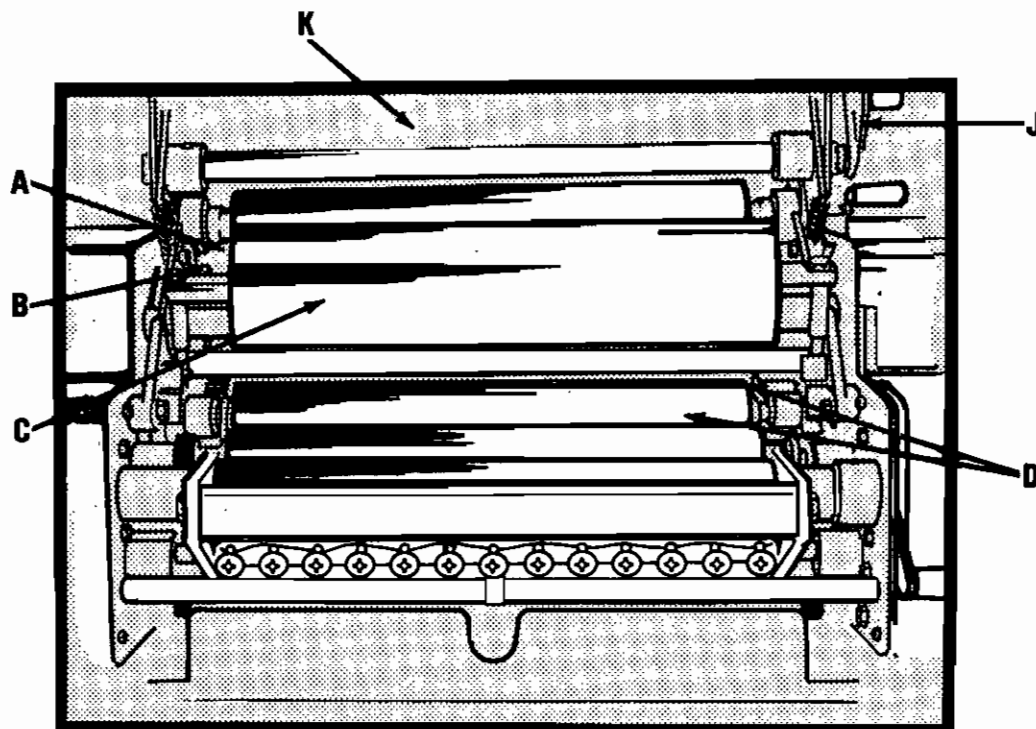
2. Place the aquamatic oscillating roller (A) in position in the ink system. Make sure the hole in the roller shaft is placed over the drive pin (B) on the non-operator side with the rounded side of the shaft up. The opposite end of the shaft is placed between the guides.

3. Position the lower ink oscillating roller (C) in contact with the two lower distributor rollers (D).

4. Move the operation control lever from Night Latch to Neutral (H).

5. Turn the ink form roller knobs to ON (I). Move the aquamatic night latch handle towards the receiving end of the duplicator (J).

6. Lower the safety cover over the ink rollers (K).



Paper Feed

1. Lower the paper guide lock (A) and move the paper guide on the non-operator side of the machine to the correct scale setting according to the width of paper being used (B).

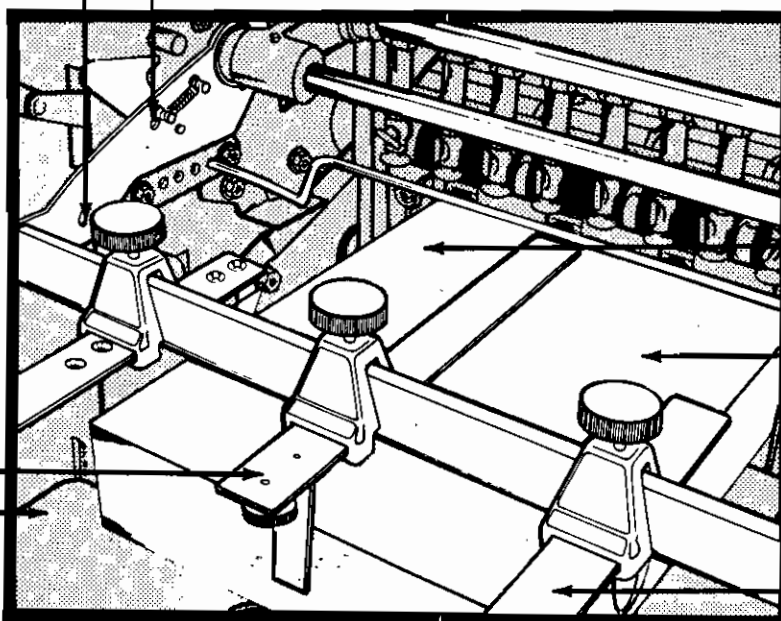
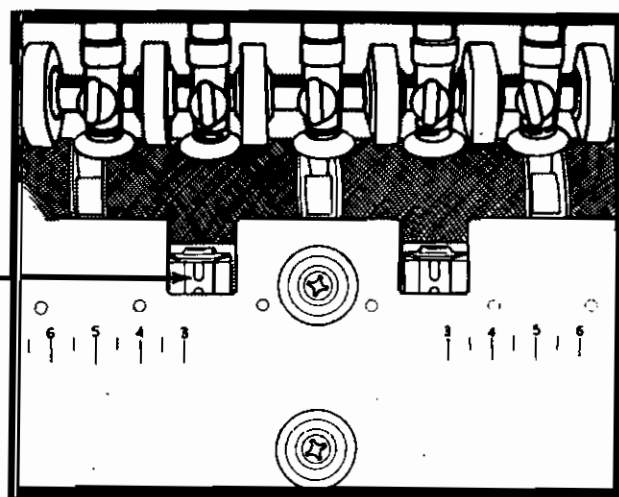
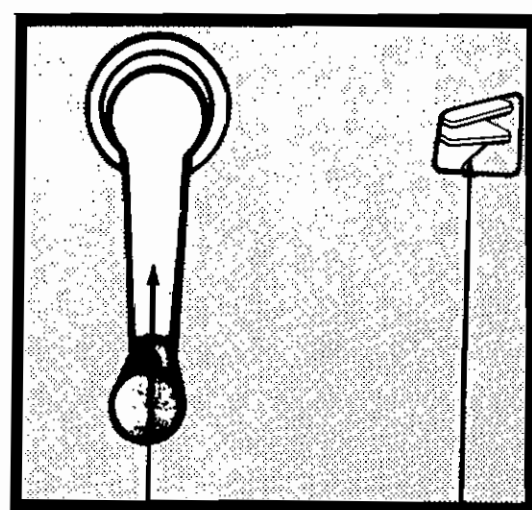
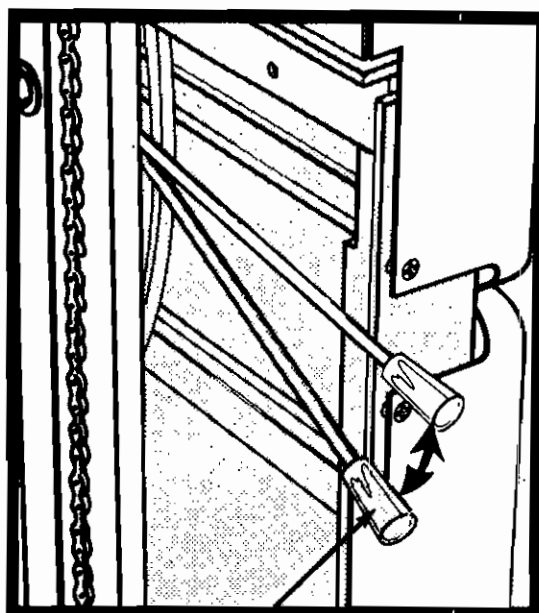
2. Position the opposite paper guide (C) to the correct scale setting. Raise the paper guide lock to secure the paper guides.

3. The paper stack supports (D) slide from side to side. They should be positioned so that the back stop (E) will clear both supports when the table is at its maximum height. Place the paper stack support board (F) on the paper stack supports. The support board should be slightly smaller than the paper size.

4. Push the table release (G) down to disengage it. Push the paper elevator crank (H) in to engage it; then turn the crank counterclockwise to lower the feed table.

5. Turn the handwheel until the four (4) paper height regulators (I) are in their lowest position.

6. Fan the paper and load it on the feed table, being careful to keep the reams neatly stacked. The assembly holding the back stop and spring guides may be lifted and latched in the up position to assist in paper loading (J). When loading is completed, release the latch (K) and bring the assembly down to the operating position.



7. **Disengage the table release** by pressing the two (2) sections of the release together. Turn the paper elevator crank clockwise to raise the feed table until the top sheets contact the paper height regulators (L). Pull out the crank to disengage it.

8. **Square the top few sheets** of paper and adjust the paper guide (M) to just touch the stack of paper on the non-operator side.

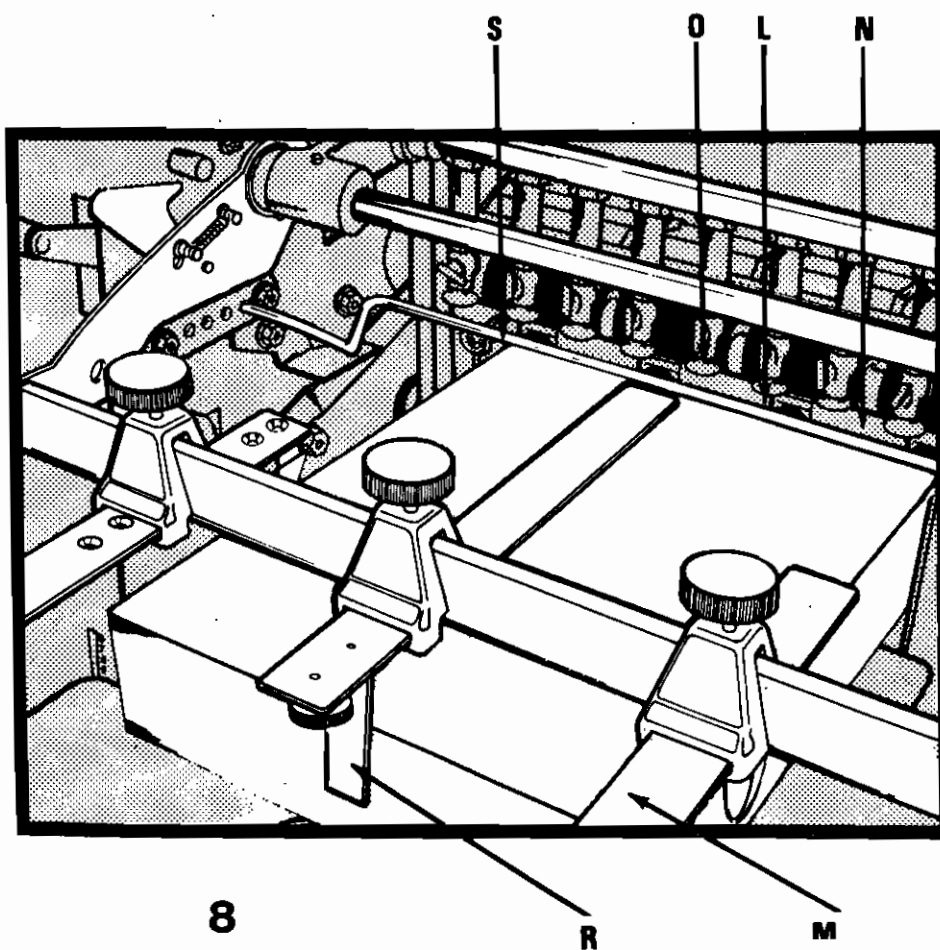
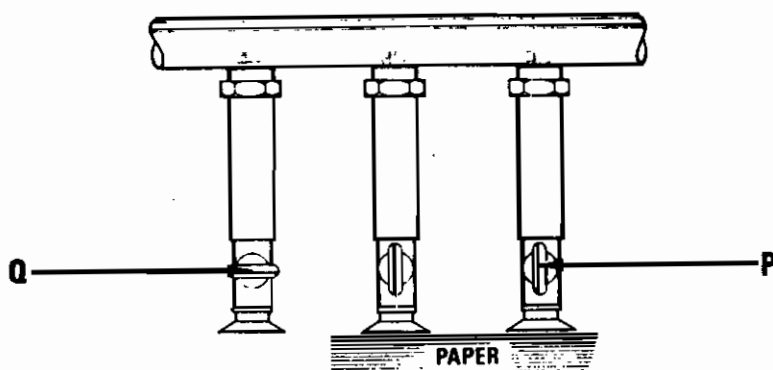
9. **The leading edge of the paper stack** should be flush with the front plate (N). As many suction feet (O) as possible should be used for the size paper being duplicated. Each suction foot has a valve to control vacuum flow. The feet that contact the sheet of paper should have the valves positioned vertically (P) while those feet not contacting the sheet should have the valves positioned horizontally (Q).

10. **Adjust the backstop** (R) so that it touches the tail end of the stack but does not bind the stack against the front plate. On heavy card or Bristol stock, there should be approximately $\frac{1}{8}$ " between the backstop and the paper stack. (There are two positions for attaching the backstop to the retainer bar. The bar and stop may also be reversed. Use the best position for the length and type of paper stock being used.)

11. **Place the paper weight** (S) in a forward notch for light papers and further back for heavier papers. See the table settings for various paper weight.

Table Settings

lb.	gm ²	Hole position
12 Bond	45 (approx.)	1 #1 hole (with special light weight paper weight)
13 Bond	49	2
16/20 Bond	61/75	2 or 3
24 Bond	90	3
60 Book	69	3
65 Cover	176	3
110 Index	203	#4 or remove



Paper Stack Height

12. The feeding level of the paper stack should generally be low for light weight papers and high for heavier papers and card stocks.

The height to which the automatic raising mechanism will bring the stack can be controlled by raising or lowering the paper height control lever. The lever may be moved through eight (8) graduations. The table below shows the approximate position for optimum feeding. With a particular paper or card stock, slight deviations may be necessary.

13. Make sure all safety covers are closed. Lift the motor drive switch (V) all the way up, then let it go. Allow the stack to reach the proper height, then turn "OFF" the motor drive switch.

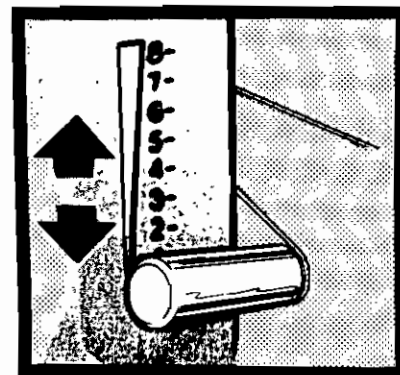
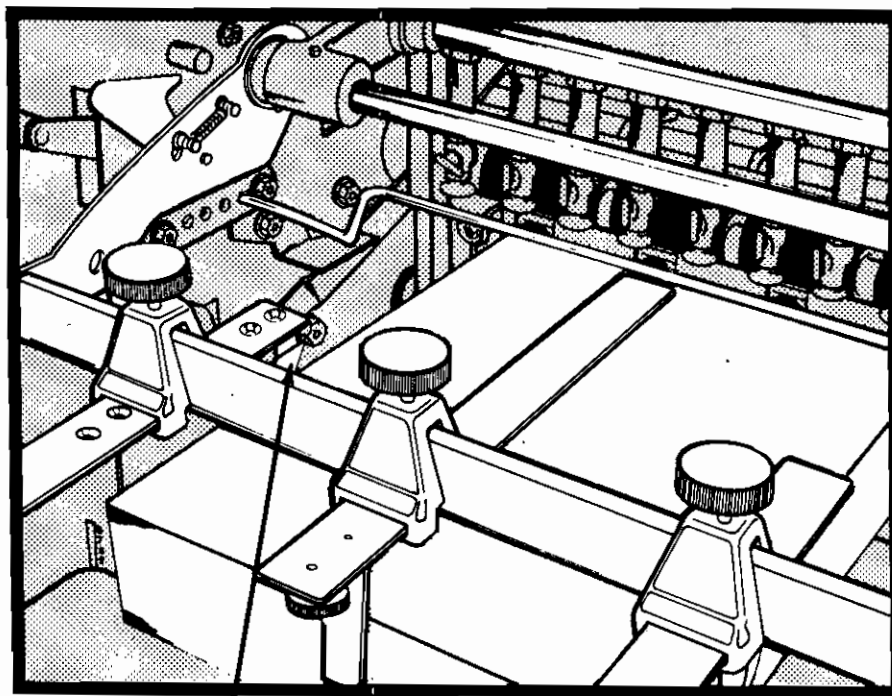
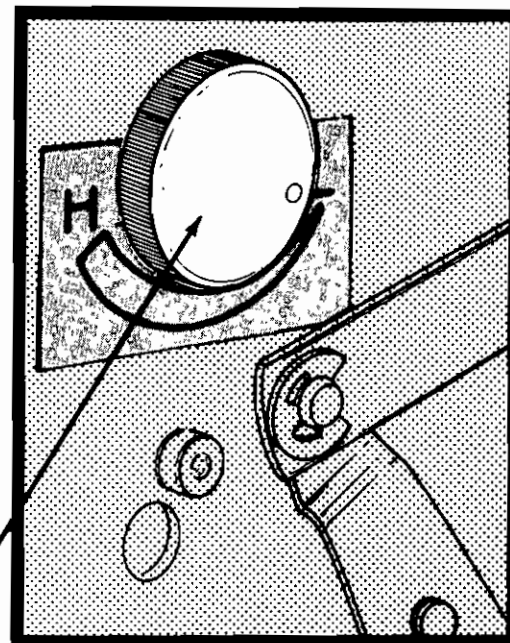
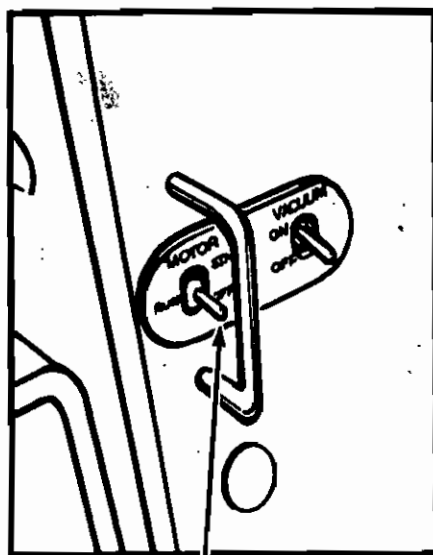
Place the spring guide (T) equidistant between the leading and trailing edges of the sheet. The spring, for most stocks, should be depressed about $\frac{1}{8}$ " by the paper stack. Make final adjustments to the rear guide and back stop.

Table of Settings

lb.	gm ²	
12 Bond	45 (approx.)	1-3
13 Bond	49	2-4
16/20 Bond	61/75	4-6
24 Bond	90	5-7
60 Book	89	5-7
*65 Cover	176	6-8
*110 Index	203	7-8

* Dual Feed Speed Control

When actuated, this control raises the paper stack at twice the normal rate of raise. For feeding normal weights of paper, it should be positioned with the dot (U) as shown below. When feeding 65lb. card stock or heavier, or envelopes, the control should be rotated 180°.



Air and Vacuum

1. Turn the air (A) and vacuum (B) control knobs clockwise as far as possible to "full" position.

2. Turn both knobs counterclockwise three half turns.

3. **To check the blowing action** turn "ON" the vacuum pump switch. (All the safety covers must be closed.) The top sheets of the paper stack should fluff up and follow the four (4) height regulators. It may be necessary to increase the air setting by turning the air control knob clockwise until the sheets fluff up and follow the regulators. Turn the duplicator "OFF".

4. **To check the suction action** lift the paper feed lever and turn the handwheel counterclockwise to manually feed one sheet of paper through the duplicator. If the suction feet do not pick up the paper properly, increase the vacuum setting by turning the vacuum control knob clockwise.

5. Lower the paper feed lever and move the vacuum pump switch to "OFF" position.

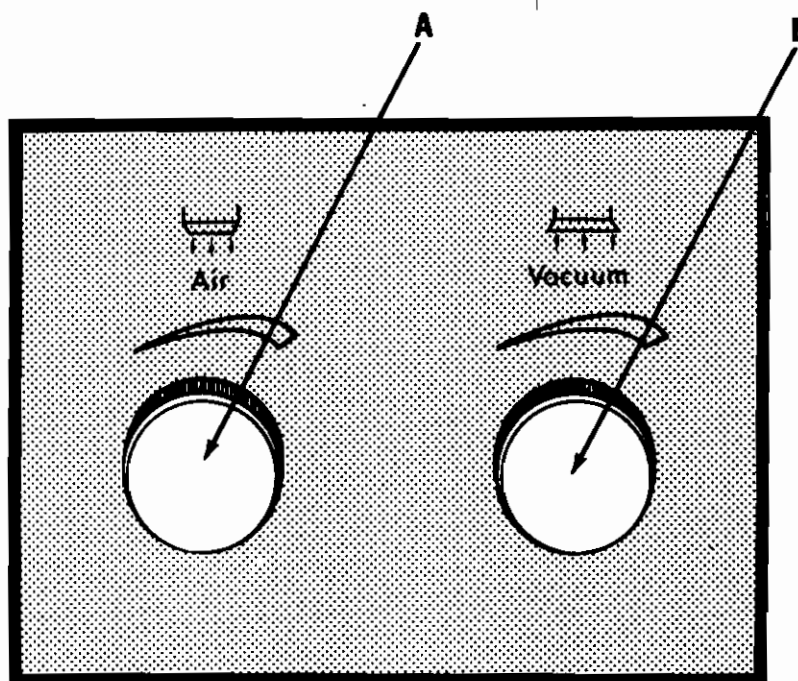


Table of Settings

With a particular paper or cover stock, slight deviations may be necessary. Air and vacuum adjustments are made from full air and vacuum positions. After adjustment has been made according to these suggested settings, increase if stock does not follow paper height regulators. Decrease if you are feeding doubles.

Air Adjustments

lb.	gm ²	
12 Bond	45 (approx.)	Turn air control counterclockwise about 8-12 half turns.
13 Bond	49	2-3 half turns counterclockwise.
16/20 Bond	61/75	2 half turns counterclockwise.
24 Bond	90	2 half turns counterclockwise.
60 Book	89	2 half turns counterclockwise.
65 Cover	176	2 half turns counterclockwise.
110 Index	203	One half turn counterclockwise.

Vacuum Adjustment

lb.	gm ²	
12 Bond	45 (approx.)	2 half turns counterclockwise.
13 Bond	49	3-4 half turns counterclockwise.
16/20 Bond	61/75	3-4 half turns counterclockwise.
24 Bond	90	2-3 half turns counterclockwise.
60 Book	89	2 half turns counterclockwise.
65 Cover	176	2-3 half turns counterclockwise.
110 Index	203	One half turn counterclockwise.

Note: A lightweight paper accessory is available. Contact your A.B.Dick Representative for information.

Buckle Control

Adequate buckle is required to deliver each sheet firmly against the paper stops (A) in the paper grippers (B). This assures accurate vertical registration.

"0" on the buckle control produces minimum buckle and "15" produces maximum buckle. The buckle is set too high if the card stock is being nicked at the leading edge. Changing the buckle may alter registration slightly. Therefore, the buckle control should not be changed during one run when close registration is needed. The normal buckle setting is 7-8 (C).

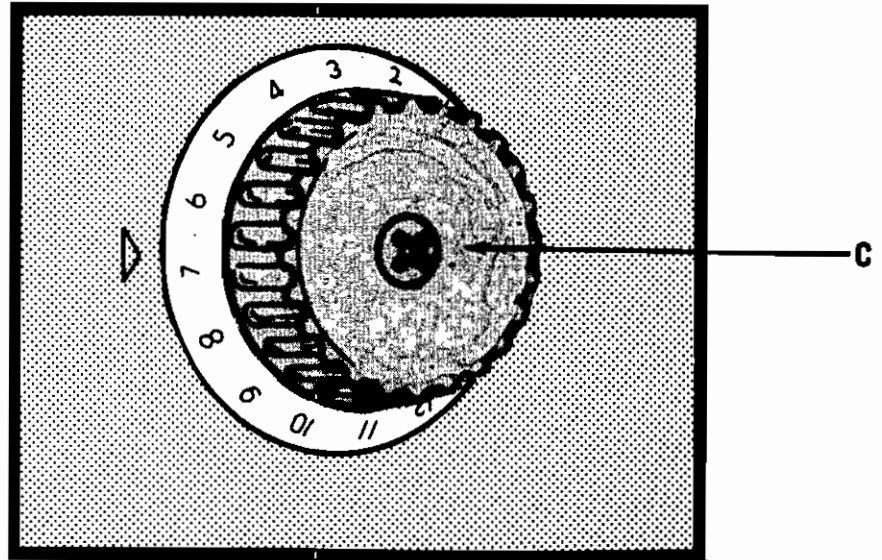
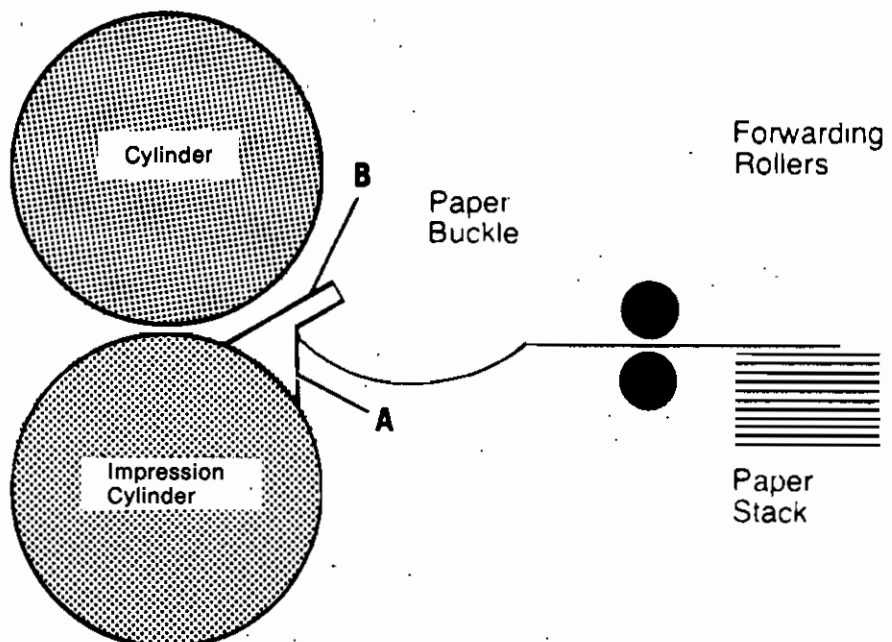


Table of Settings

With a particular paper or cover stock, slight deviations may be necessary.

lb.	gm ²	
12 Bond	45 (approx.)	15
13 Bond	49	12
16/20 Bond	61/75	7-8
24 Bond	90	5-6
60 Book	69	5-6
65 Cover	176	3-4
110 Index	203	0-2



Chain Delivery and Receding Stacker

WARNING:

BE SURE THE DRIVE MOTOR IS OFF WHENEVER EITHER SAFETY SCREEN IS OPEN AND EXERCISE CAUTION. AT NO TIME SHOULD ANYTHING BE ALLOWED TO REST ON THE CLOSED SCREEN.

1. Place the dolly (A) on the yoke assembly (B) with the swivel wheels in toward the duplicator.
2. Place the two-position handle on the raise/lower stud (C) (for accelerated raise) and lift the dolly until it is just below the guides (D) of the chain delivery. Be careful not to jam the dolly into the jogging arms.

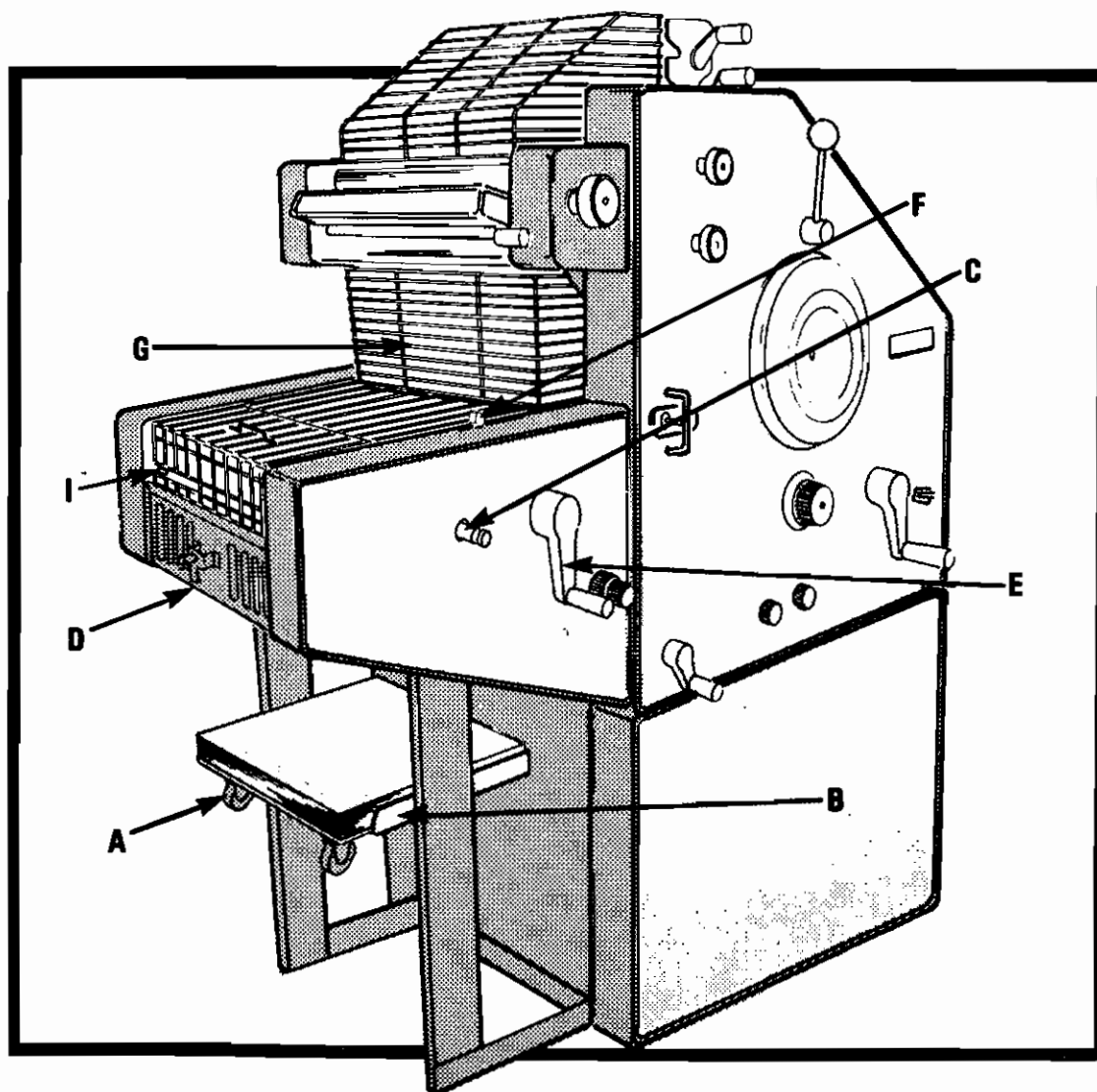
Seat the handle on the normal raise/lower stud (E) (as shown), place the table raise lever (F) fully toward the delivery-end of the duplicator, and raise the dolly until it is flush with the bottom of the chain delivery guides.

3. Hand feed one sheet into the duplicator and turn the handwheel counterclockwise until paper is held by the chain grippers.
4. Open the delivery-end safety screen (G), exercising caution while the screen is open.

5. Continue to turn the handwheel until the gripper bar reaches the delivery-end sprockets (H).

Loosen and move the black knurled screw (I) at the delivery-end of the duplicator and adjust the non-operator-side guide to just touch the edge of the paper.

6. Again, continue to turn the handwheel until the paper is released and drops on the receiving dolly. Adjust the operator-side guide (J) so it just touches the paper.



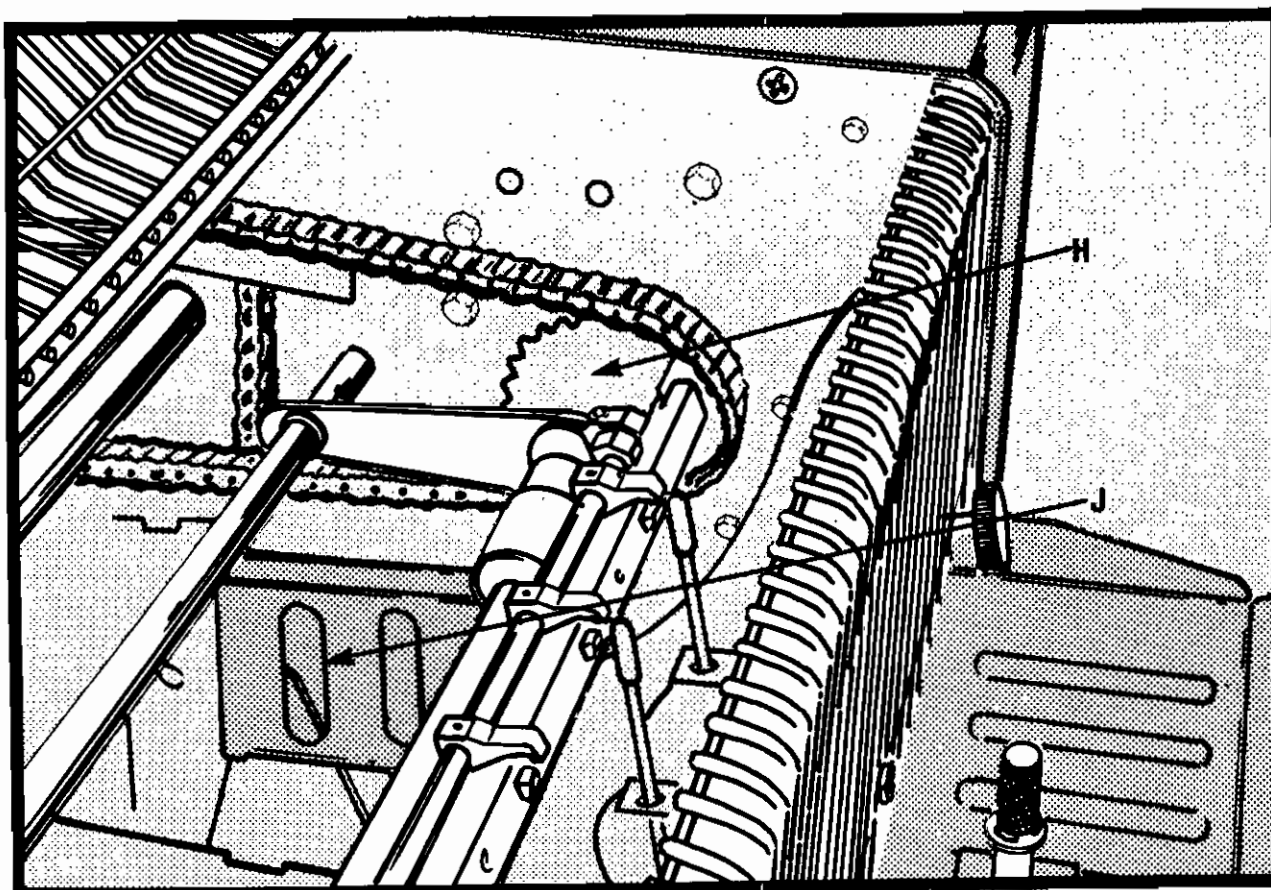


FIGURE 2

Chain Delivery and Receding Stacker

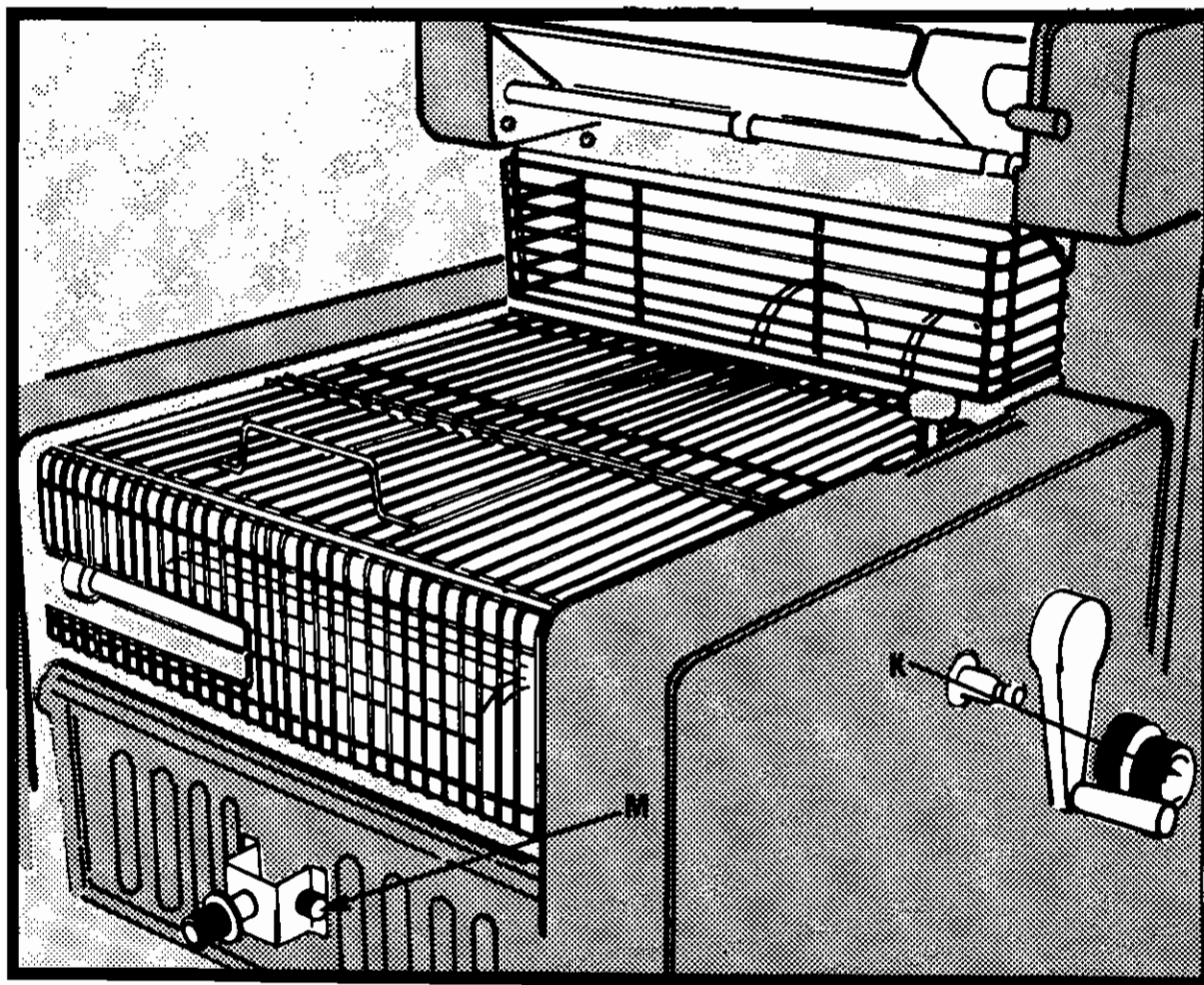
7. As the gripper releases the paper, the back jogger is still away from the paper. Turn the handwheel until the jogger moves fully toward the paper and loosen the center locking knob (K) of the back jogger control.
8. Loosen the knurled knob on the hinged lead-edge stop (M) and adjust the stop so that the back jogger can fully stack the sheet without forcing the back stop to move.
9. Pull the knurled knob (N) toward the non-operator-side of the sprocket shaft and position the cam of the variable paper release sprocket so that the pin is in the center hole (position 4).

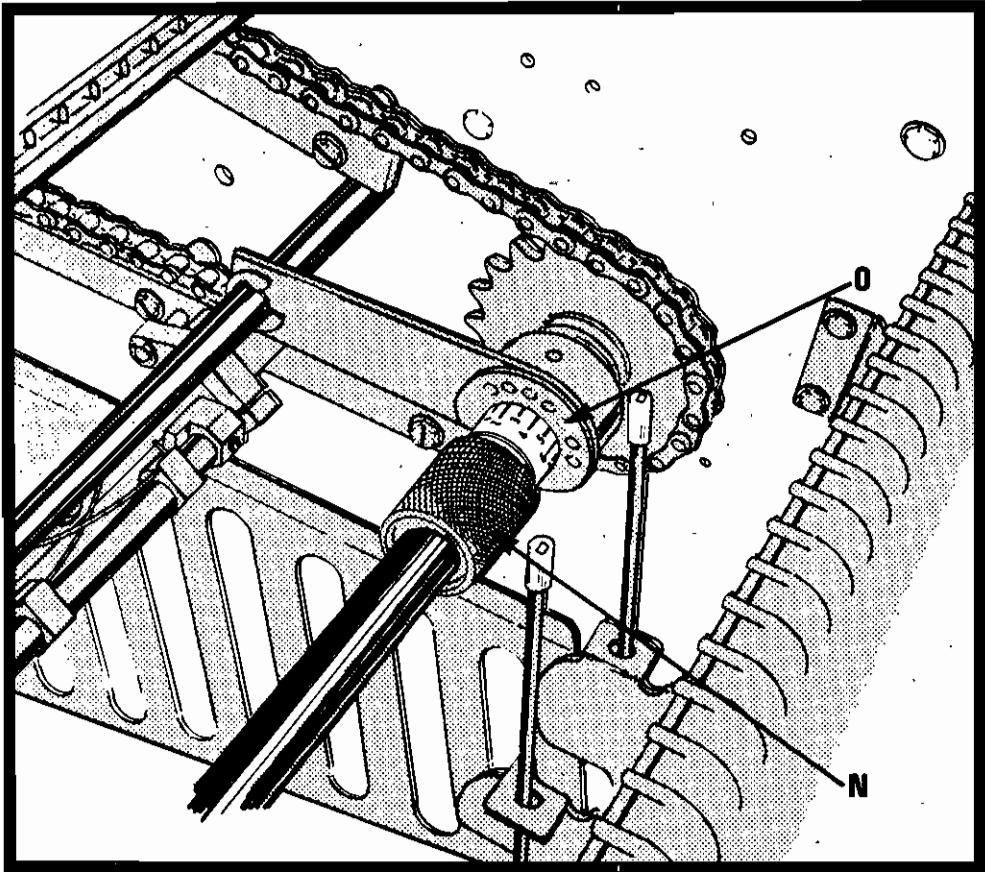
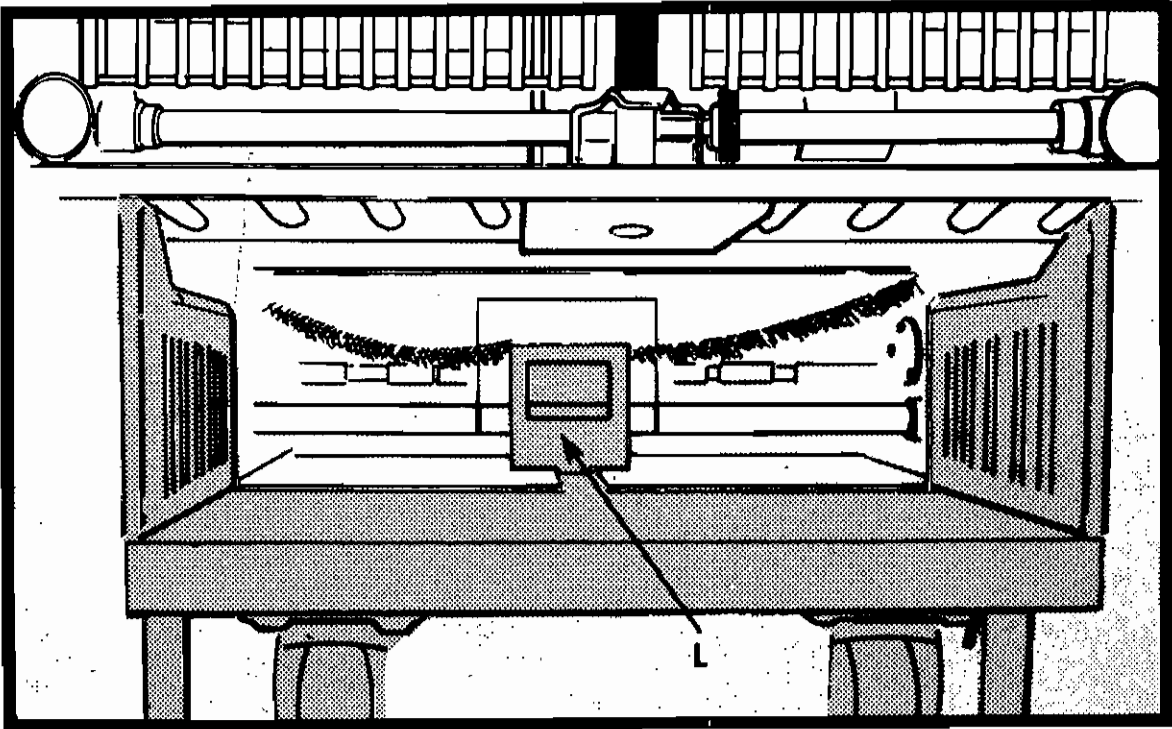
Turning the outer adjusting knob of the back jogger control, position the back jogger (L) until the jogger is almost touching the trail edge of the paper.

Lock the back jogging guide in place and make sure the back jogger and side guides do not bind on the dolly.

When feeding lightweight paper, position the cam at a higher number, and reseal the pin in another hole (O). This will allow the gripper to hold the paper longer and provide better stacking on the dolly.

When feeding heavier stock, rotate the cam to a lower number.





Chain Delivery and Receding Stacker

10. The Delivery Wheels (P) are normally positioned one to two inches from the edges of the duplicated sheet. They can be adjusted in or out for various types of copy and stock.

WARNING:

THE DELIVERY WHEELS MUST BE INSTALLED CORRECTLY TO AVOID DAMAGE TO THE GRIPPERS. IF THE WHEELS ARE REMOVED, REINSTALL AS FOLLOWS:

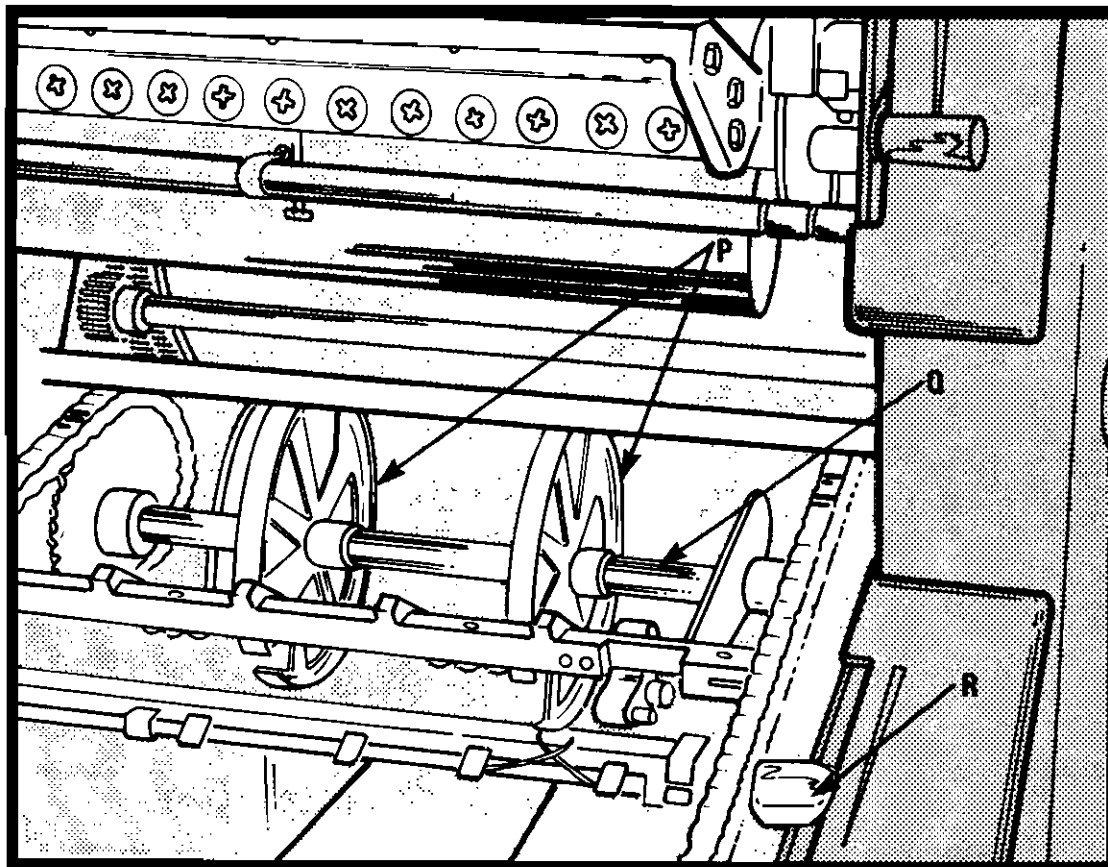
1. TURN THE HANDWHEEL UNTIL THE GROOVE OF THE DELIVERY ROLLER SHAFT (Q) IS FACING UP (12:00 POSITION),

2. PLACE THE OPEN DELIVERY WHEELS ONTO THE SHAFT SO THAT THE SPRING-LOADED LATCHES ARE ON THE NON-OPERATOR-SIDE OF THE DELIVERY WHEELS.

3. LOCK THE DELIVERY WHEELS ONTO THE SHAFT AND SLOWLY ROTATE THE HANDWHEEL TO ASSURE THAT THE GRIPPERS WILL CLEAR THE SHAFT.

11. Adjust the receding control lever (R) toward the feed-end of the chain delivery for heavier stocks and toward the receiving-end for lighter weight paper. For normal lever position, center the lever in its slot, then bring the lever back toward the receiving-end of the duplicator 5-6 notches.

Since the lever controls the rate of descent of the dolly, readjust the lever after running 400-500 sheets so that the top of the paper stack is centered between the top and bottom of the paper joggers when producing copy.



Inking

1. Turn the ink fountain screws (A) all the way clockwise; this shuts off the ink supply. Then turn all the screws one-half turn counterclockwise. These screws provide an even flow of ink to the rollers.

2. Using cartridge ink and an ink gun, pull the trigger on the gun to dispense ink evenly across the ink fountain. If you are using canned ink, remove a quantity of ink from the can with an ink knife, being careful to keep the surface of the ink in the can level.

3. Spread ink in the ink fountain. Using the ink fountain roller handle (B), rotate the ink fountain roller (C) counterclockwise at least one revolution to carry the ink well down into the ink fountain and coat the roller with ink. Rotate the hand wheel counterclockwise until the ink ductor roller (D) contacts the ink fountain roller. While rotating the ink fountain roller counterclockwise, adjust the ink fountain screws until an even, finely stippled effect is obtained on the ink ductor roller (it will look like the peeling of an orange in texture).

4. Move the Aquamatic lockout latch (E) to allow full contact of the ductor roller to the oscil-roller.

5. Move the ink fountain control to the No.11 position (F).

6. Move the Aquamatic control to the No.45 position (G).

7. Make sure all safety covers are closed.

8. Lift motor drive switch (H) to turn "ON" the duplicator.

9. Adjust the speed. The speed control (I) adjusts the running speed from 2,500 to 10,000 copies per hour. We suggest that a beginning offset operator run the machine at a lower speed until he/she becomes proficient in its operation.

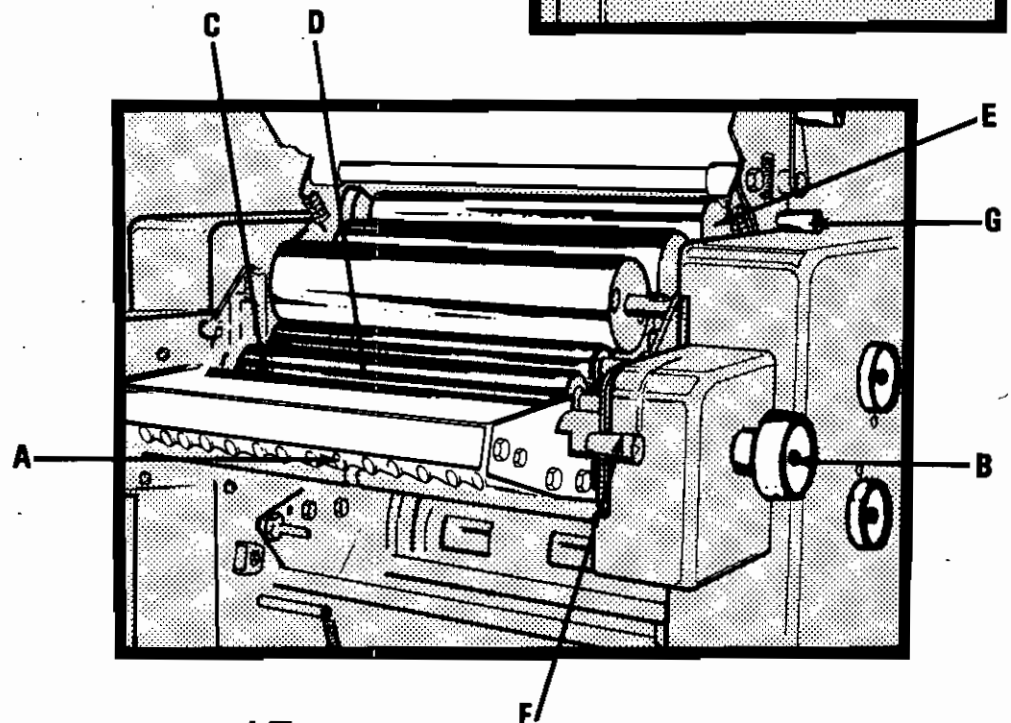
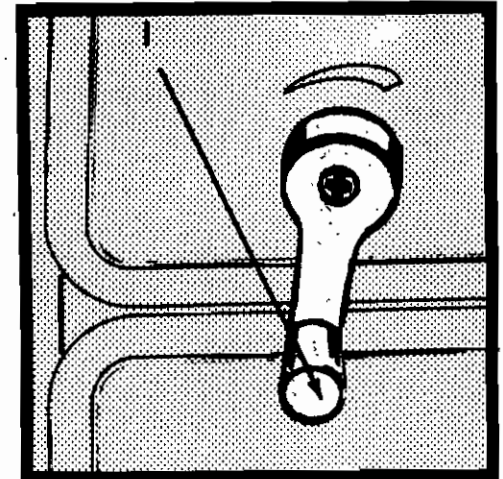
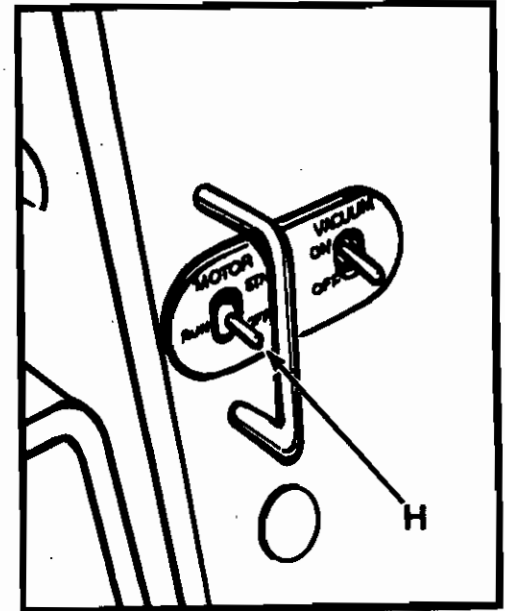
10. Allow the machine to run until all rollers are evenly covered with a thin film of ink, including the two in the Aquamatic unit.

11. Move ink fountain control to the No.1 position.

12. Move the Aquamatic control to the operating position (usually position No.20).

13. Move the Aquamatic lock-out latch to allow automatic ducting during duplicating.

14. Lower the motor drive switch to turn "OFF" the duplicator.

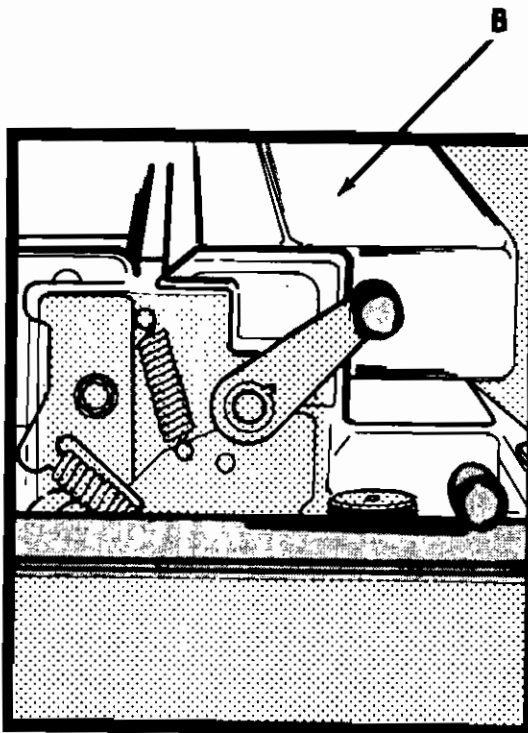
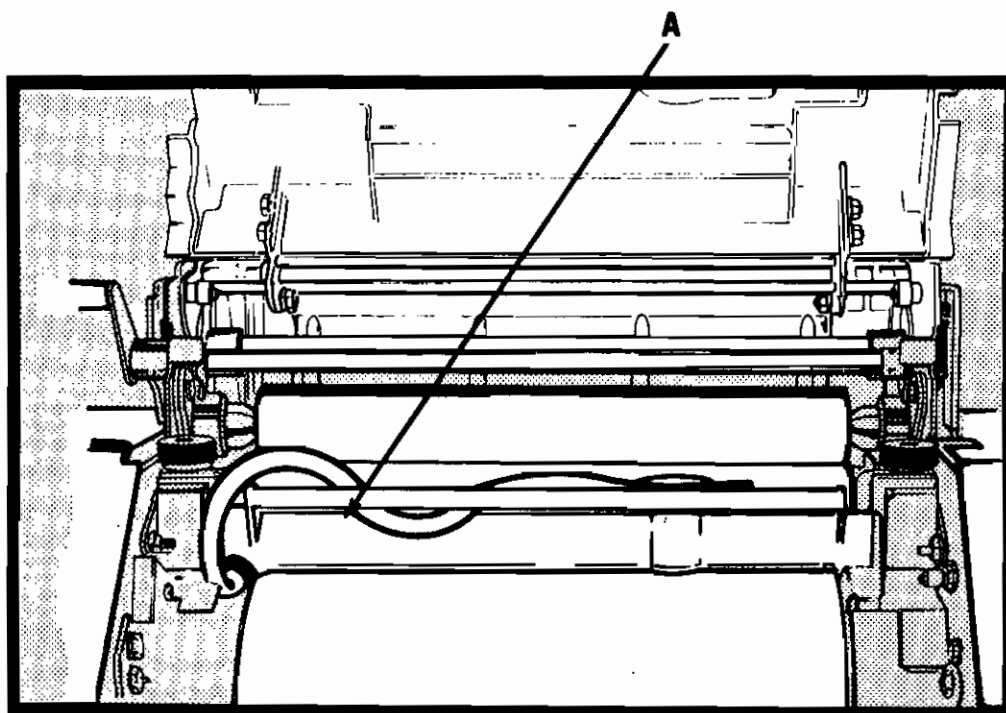


Fountain Solution

Always be sure all ink rollers, including the two in the Aquamatic unit, are inked before fountain solution is added.

1. Fill the fountain solution bottle with A.B.Dick Fountain Concentrate properly diluted (usually 1 part concentrate to 15 parts distilled water) and recap the bottle. Make sure the drain hose is properly secured (A); close the safety cover and place the filled bottle in position in the Aquamatic unit (B).

2. As soon as the flow of fountain solution from the bottle stops, the ink and water system is in operating order. No running-in or warm-up time is required.



Attaching A Master

Pinbar

1. Lower the safety cover over the cylinders.

2. Attach the lead end of the master to the head clamp. While holding the master taut, crease the master at the head clamp (A).

3. Holding the master taut with the right hand, rotate the hand-wheel counterclockwise with the left hand until the tail clamp is about 1" from the Aquamatic fountain. Be careful to avoid contacting the master to the ink form rollers.

4. Hold the master tightly against the cylinder surface with the left hand and crease the master. Lift the tail clamp (B) up with the right hand and insert the clamp down into the master punchings (C). The tail clamp automatically adjusts to the position of the tail punchings of the master.

Caution: Keep fingers clear of sharp tail clamp spikes.

5. Using a cotton pad moistened with Etch, apply the correct type of Etch for the master being duplicated.

6. When using a metal plate, the two knurled knobs (D) are used to tighten and lock the plate to the cylinder on runs where accurate registration is required.

7. Raise the safety cover.

Straight Edge

1. Lower the safety cover. The open safety cover becomes a master loading table for straight edge masters. Set the side guides (E) to the width of the master, using the scale on the loading table to center the master.

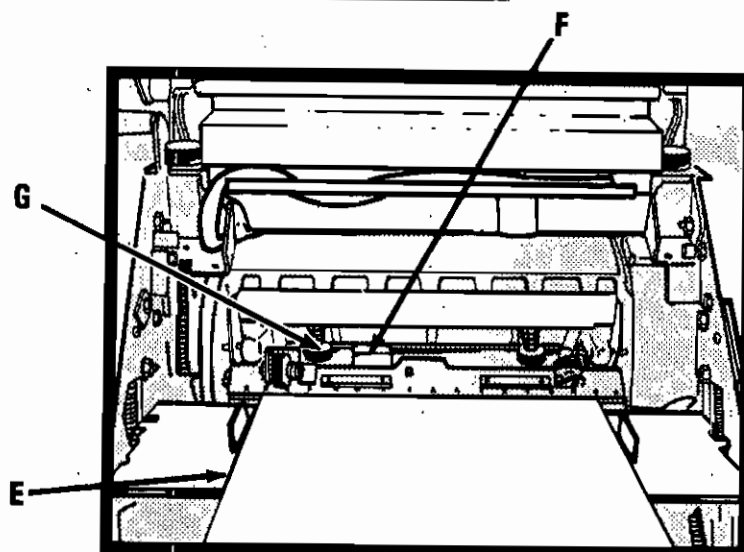
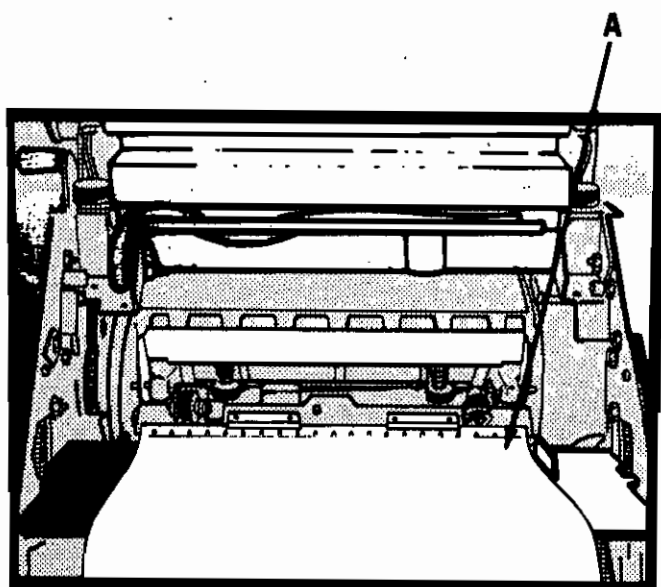
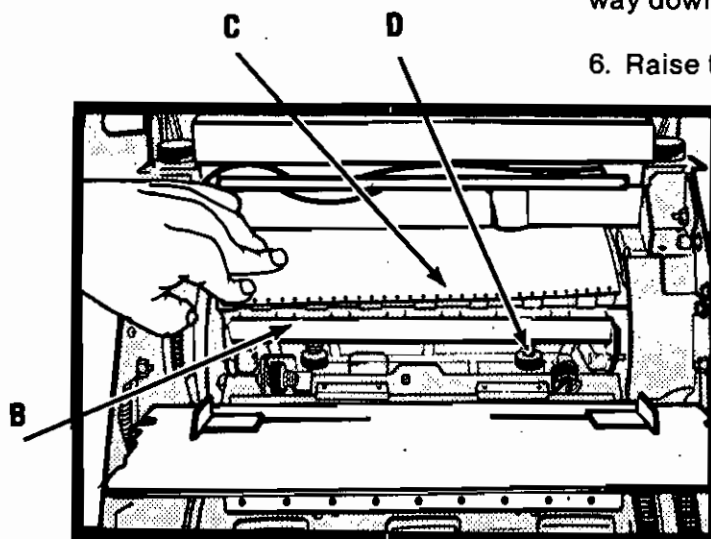
2. The straight edge clamp is opened by depressing the head clamp lever (F).

3. Slide a straight edge master into the clamp until it touches the stop evenly across the width of the master. Release the head clamp lever and crease the master.

4. If a full size master is being used, punch the master with the teeth of the tail clamp.

5. The tail clamp must be tightened completely when it is not holding a master. Tighten the knurled knobs (G) all the way down.

6. Raise the safety cover.



Sequence of Operation

1. Close all safety covers. Be sure the Aquamatic control is at position No.20 and the ink fountain control is at position No.1.

You may find that the best setting for the master and ink combination being used, and the speed at which the duplicator is being run, is different than mentioned here. In this case, make the appropriate adjustment to the Aquamatic control and/or the ink fountain control to suit your requirements.

2. Lift the motor drive and vacuum pump switches (A) to start the duplicator.

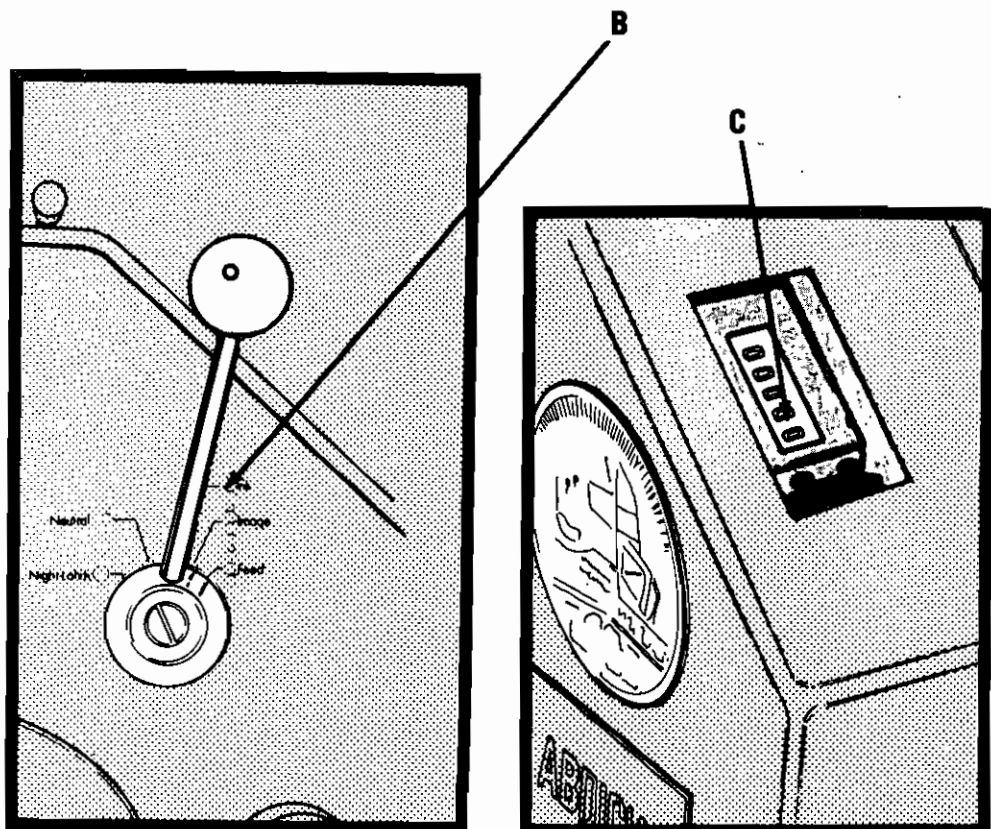
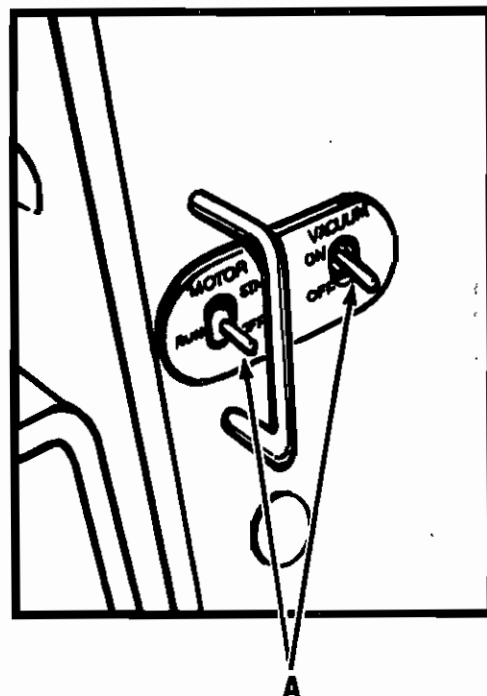
3. Move the operation control lever to INK (B). Look at the master as the duplicator is running and be sure the master is clean of any ink deposits in the non-image area. If it tends to pick up ink in the non-image area, this is an indication that there is either too much ink or too little water being fed into the system.

4. Move the operation control lever to IMAGE and hold it there for several revolutions (normally two to four revolutions are required). Then move the operation control lever to FEED. When released, the lever will automatically return to INK.

5. Allow one sheet of paper to be fed; then press the FEED lever off. Inspect the copy for position, clarity, and general acceptability. If copy adjustments are necessary, move the operation control lever to NEUTRAL, lower the motor drive switch and see "Copy Adjustments."

6. If the trial copy is acceptable, set the copy counter (C) to "0". Lift the paper feed lever to the "ON" position.

If necessary, rotate the ink fountain roller counterclockwise and adjust the ink fountain screws until an even film of ink with a stippled appearance is achieved. You may wish to adjust the ink fountain adjusting screws to compensate for heavy or light copy on one side of the master. To adjust the flow of ink to a particular area on the master, turn the ink fountain screws clockwise to decrease the ink supply and counterclockwise to increase the ink supply. The overall increase or decrease of ink being fed to the master can be adjusted by setting the ink fountain control. Setting No.1 is the minimum amount and Setting No.11 is the maximum amount.



Sequence of Operation

7. When the required number of copies have been duplicated, lower the feed lever and move the operation control lever to NEUTRAL.

8. If the master is to be filed, remove the excess ink from the master image by allowing six to eight sheets of paper to go through the machine with the control lever in NEUTRAL. Then, lower the feed lever.

9. Lower the motor drive switch to turn "OFF" the duplicator.

WARNING: Blanket Wash is either flammable or combustible. Do not use near fire or open flame and avoid prolonged skin contact. Also, provide adequate ventilation.

10. Always clean the blanket after each run (and periodically during a long run) using a cloth dampened with Roller Cleaner and Blanket Wash.

Copy Adjustments

Stop the duplicator when making any copy adjustments.

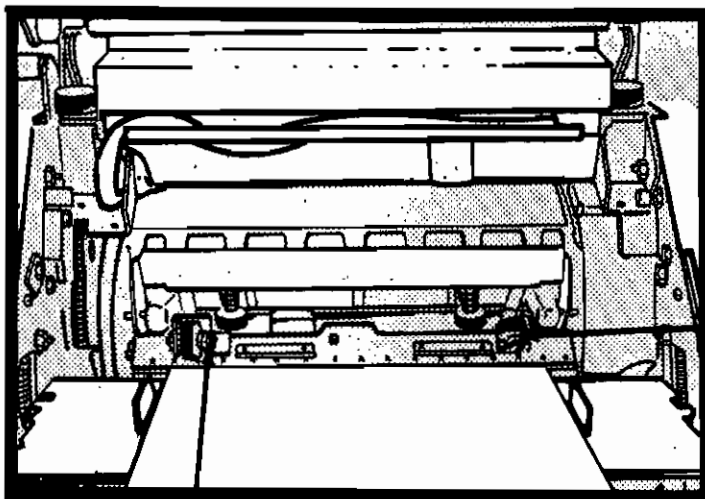
1. **Angular copy adjustments** can be made by removing the master from the master cylinder and adjusting the knurled knob (A) so that the right end of the master cylinder head clamp moves in the proper direction. If the copy is running downhill from left to right, turn the knurled knob counterclockwise to raise the copy. If the copy is running uphill from left to right, turn the knob clockwise to lower the copy. Clean the blanket after making this adjustment.

2. **Lateral copy adjustments** up to approximately $\frac{1}{4}$ " can be made by removing the master from the master cylinder and turning the knurled knob (B) so the head clamp moves in the desired direction. When straight-edge masters are used, merely

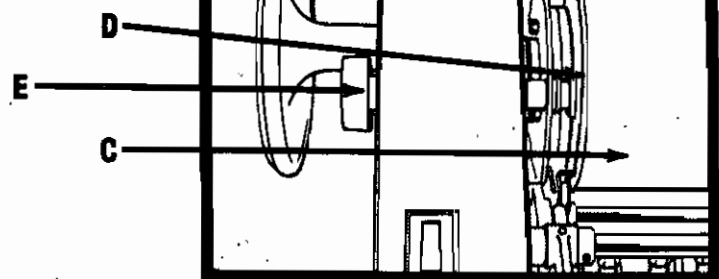
release the head clamp and move the master in the desired direction. After making this adjustment, the blanket must be cleaned.

For a lateral adjustment greater than $\frac{1}{4}$ ", move the paper stack.

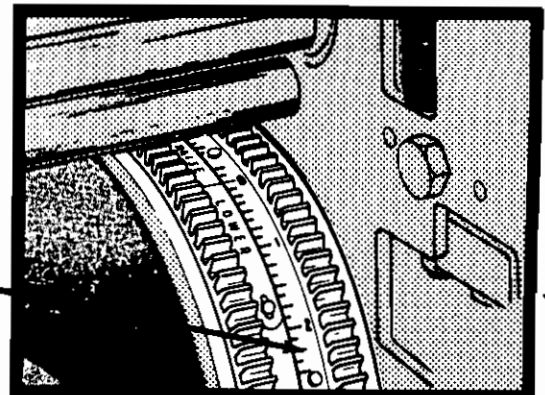
3. **Vertical copy adjustments** are made by rotating the blanket cylinder until the locking nut (C) lines up with the built in print adjusting wrench (D). Push in the vertical adjustment knob (E) and loosen the locking nut by turning it counterclockwise. Continue to hold the knob. Move the scale (F) by turning the handwheel and follow the arrows to raise or lower copy. After the adjustment is made, tighten the locking gear. It is not necessary to clean the blanket after lowering or raising the copy, as the relationship of the master cylinder to the blanket cylinder remains the same.



B



F



Impression Cylinder Adjustment

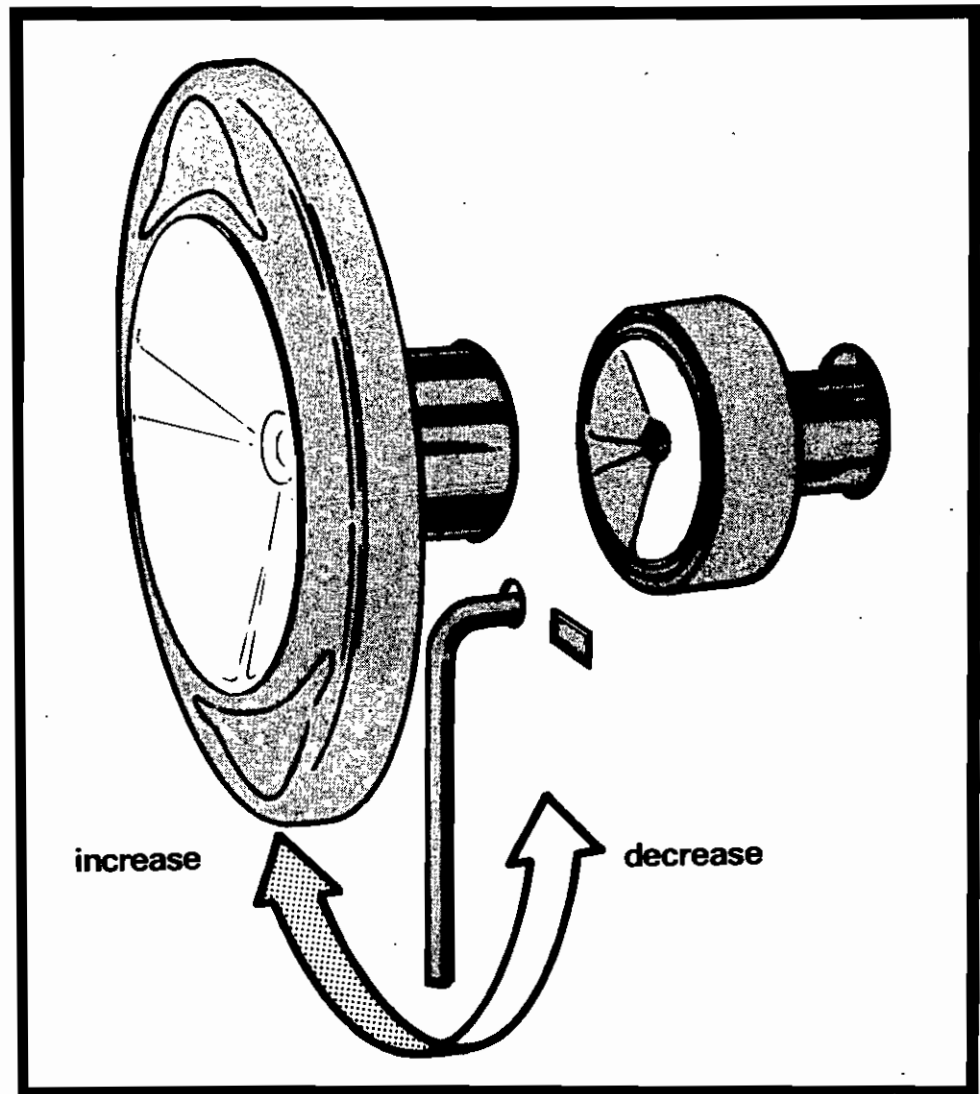
CAUTION: Keep your hands and Allen wrench clear of the rotating handwheel while making the Impression Cylinder adjustment.

The Master and Impression Cylinders automatically adjust to the Blanket Cylinder to compensate for changes in master or paper thickness. Some applications, however, may require an adjustment in the Impression Cylinder Control. For instance, the copy quality in rough textured papers, particularly copy which contains halftones and solids, can be improved with a slightly increased pressure from the Impression Cylinder. Make this adjustment when the master or plate to be run is in the Master Cylinder.

1. Insert the Allen wrench into the Control Dial opening and turn the Dial to the lower numbers (clockwise) to increase pressure and to the higher numbers (counterclockwise) to decrease pressure.

2. With paper feeding through the machine, turn the dial toward the high numbers (minimum pressure) until poor copy is achieved. Then slowly turn the dial toward the low numbers (maximum pressure) until optimum copy quality is obtained. The maximum pressure setting should be used only on porous or rough finished papers to fill in the low areas. A good rule to follow is that 20 lb. paper or lighter will require a setting on the lower number dial range and paper stock heavier than 20 lb., including card stock and envelopes, will require a higher number setting.

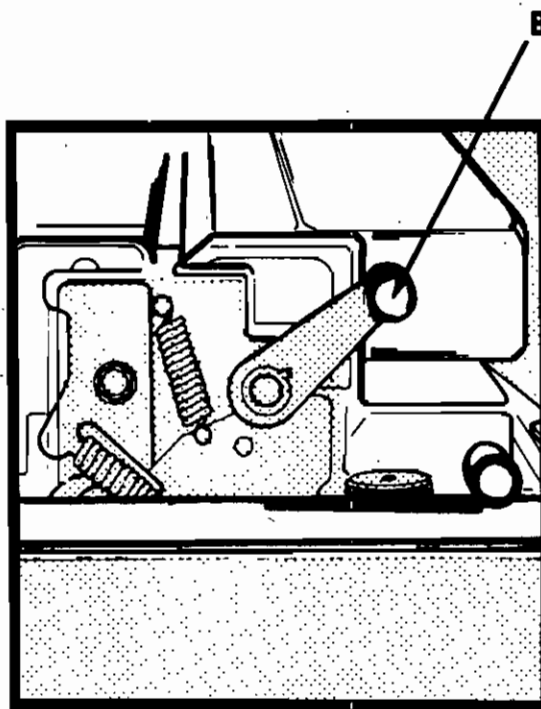
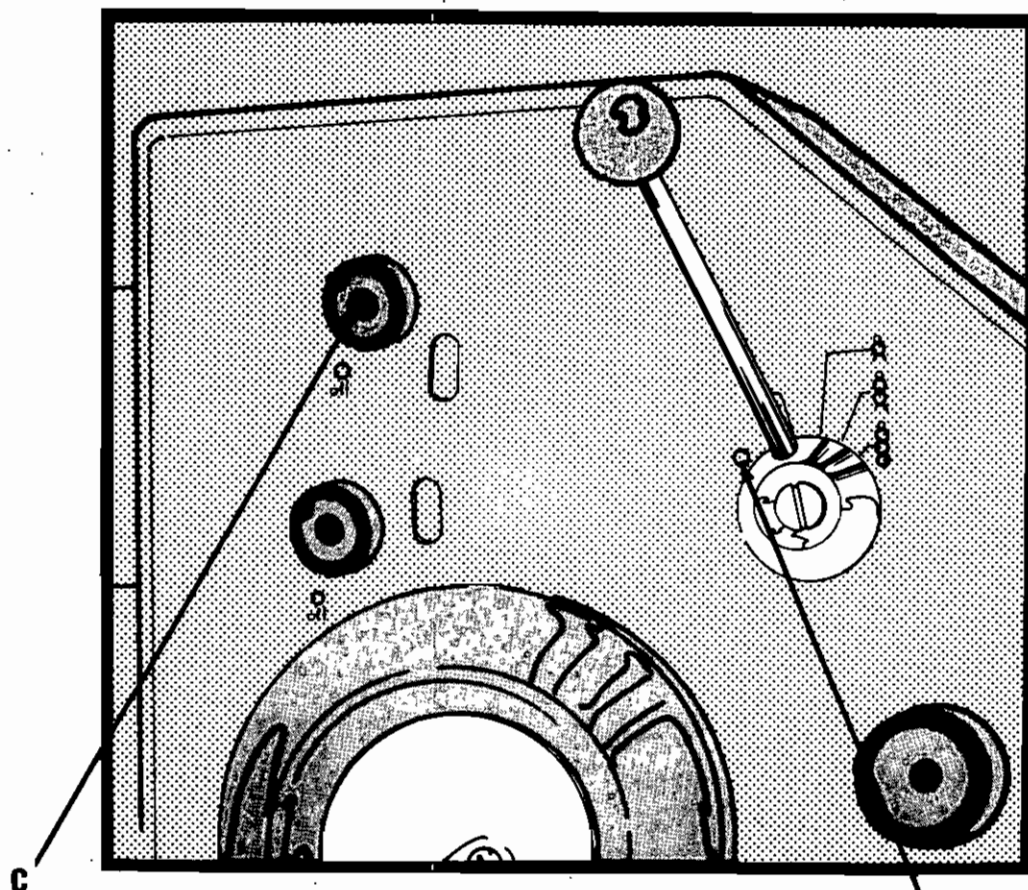
3. Do not over-adjust the pressure. Too great a pressure will spread the image and shorten the life of the blanket. If used properly, use of this control can greatly increase the life of the blanket.



Idle Periods During the Day

To prevent the possibility of flat spots forming on the rollers, this procedure should be followed when the duplicator is idle.

1. Move the operation control lever to **Night Latch** (A).
2. Remove the fountain solution bottle and set it on a stable, flat surface.
3. Move the Aquamatic night latch lever toward the feed end of the duplicator (B).
4. Turn the upper form roller knob to the "OFF" position (C).



WARNING: Blanket Wash is either flammable or combustible. Do not use near fire or open flame and avoid prolonged skin contact. Also, provide adequate ventilation.

1. Remove the fountain solution bottle.

2. **Raise the safety cover** and unfasten the hose to drain and discard the fountain solution from the Aquamatic fountain. Do not reuse this solution. Close the safety cover.

3. **Use strips of card stock** to easily remove the excess ink from the ink fountain. Place one card in the fountain, sliding it under the ink. Insert the second card at about right angles to the ink fountain roller, wedging the ink between the two cards. Hold the cards together and remove. Discard the ink and soiled cards. Repeat as necessary.

4. Turn the ink fountain control to the "OFF" position (A).

5. **Remove the ink fountain** by turning it up to a vertical position (B) and then lifting it off the duplicator. Remove the ink ductor roller. Clean the ink ductor roller and ink fountain with a cloth moistened with A.B. Dick Roller Cleaner and Blanket Wash 4-4315. **Do not** use Automatic Blanket Cleaner Solution 4-1235 for roller and machine clean-up.

6. Replace the ink fountain and raise the Aquamatic lock-out latch (C). Set the Aquamatic control at position No.45 (D).

7. Attach a clean-up mat to the master cylinder just as you would a master.

8. Close all safety covers, start the machine and turn the speed down to a low range.

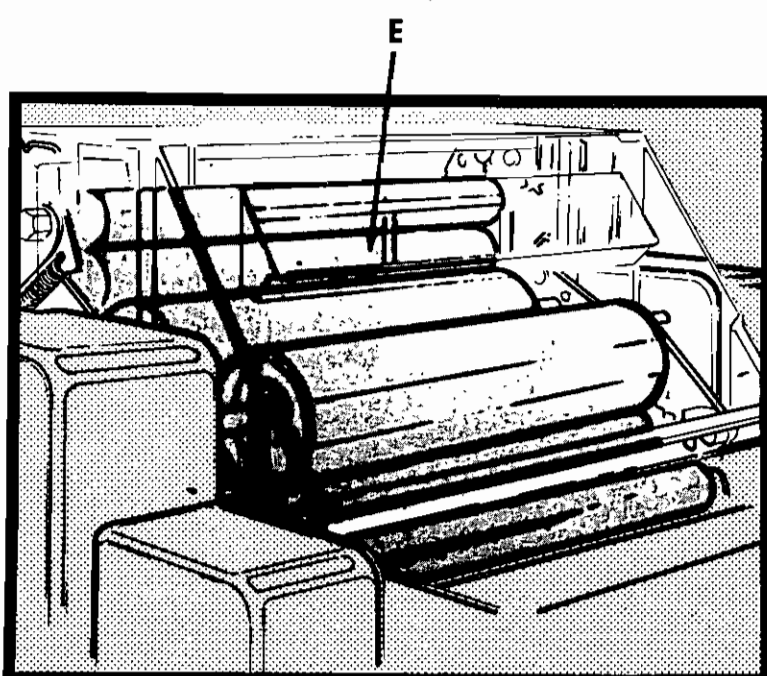
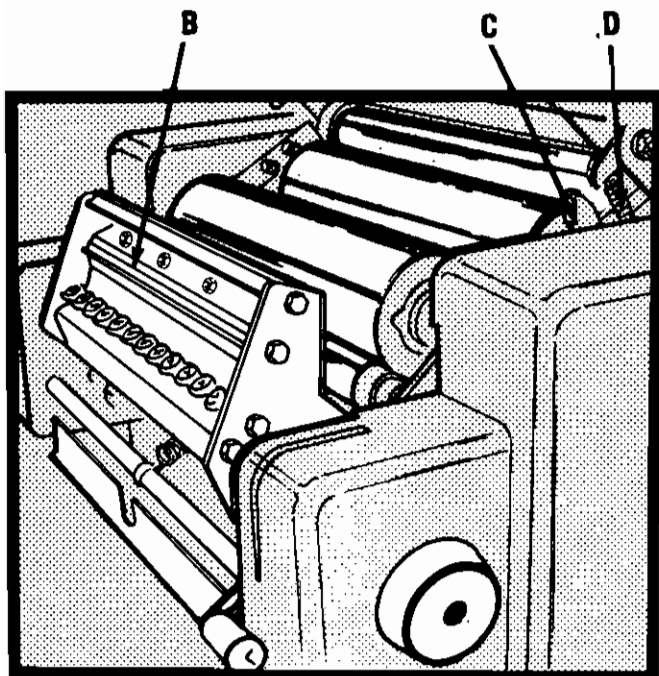
9. **Using a container** filled with blanket wash, apply a small amount of blanket wash over the ink oscillating roller through the opening in the safety cover (E).

10. **Move the operation control lever to INK.** Be sure all rollers are in the operating position.

NOTE: Do not move the control lever to the **FEED** position during clean-up.

Do not use too much blanket wash at one time, as it will drip into the Aquamatic fountain.

11. **Move the operation control lever to NEUTRAL** when the clean-up mat is covered with ink. Stop the machine, remove the clean-up mat and set it aside. (When thoroughly dry, the mats may be reused on the reverse side.) Repeat this cleaning operation until all rollers are clean and dry. The last mat should be completely clean when the cleaning procedure is completed. Do not allow a film of blanket wash to remain on the rollers, as this can cause glazing or sensitizing of the rollers.



12. Replace the ink ductor roller and move the Aquamatic night latch lever toward the feed end of the duplicator (F).

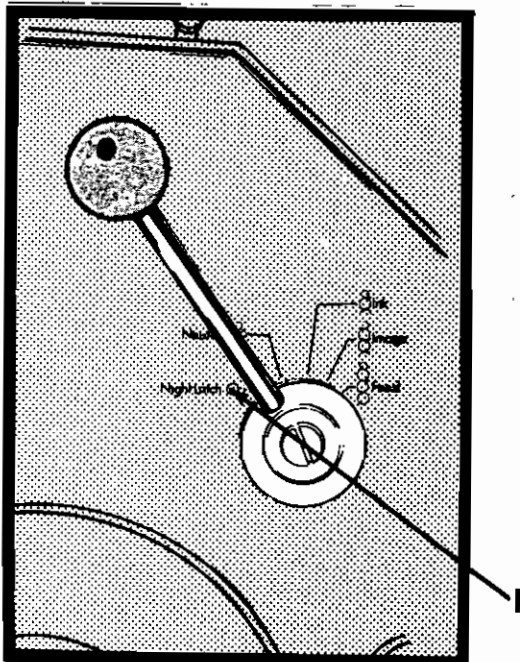
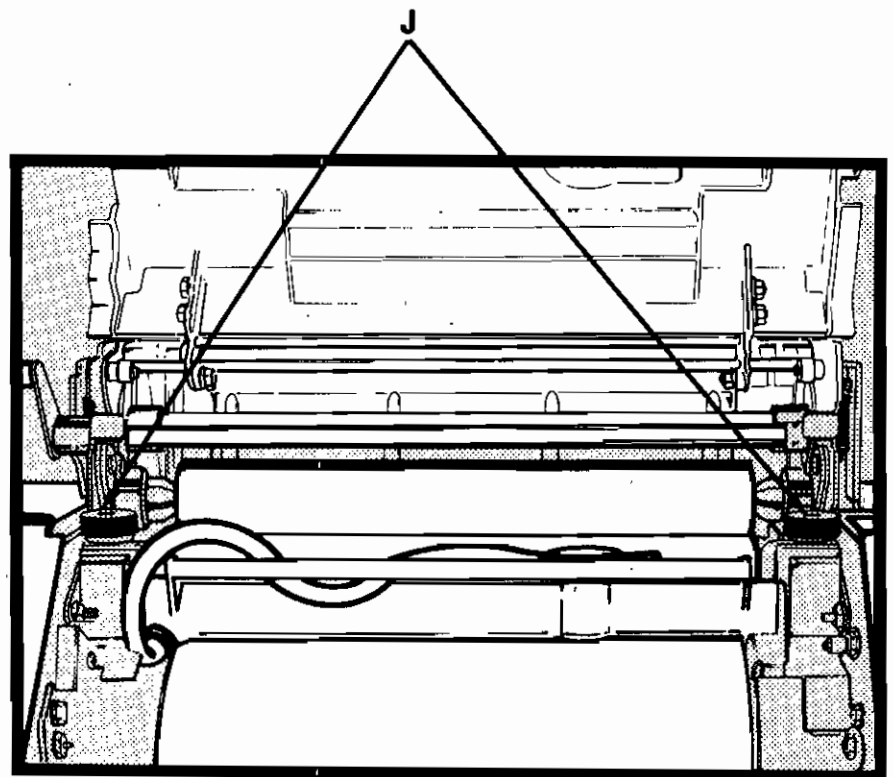
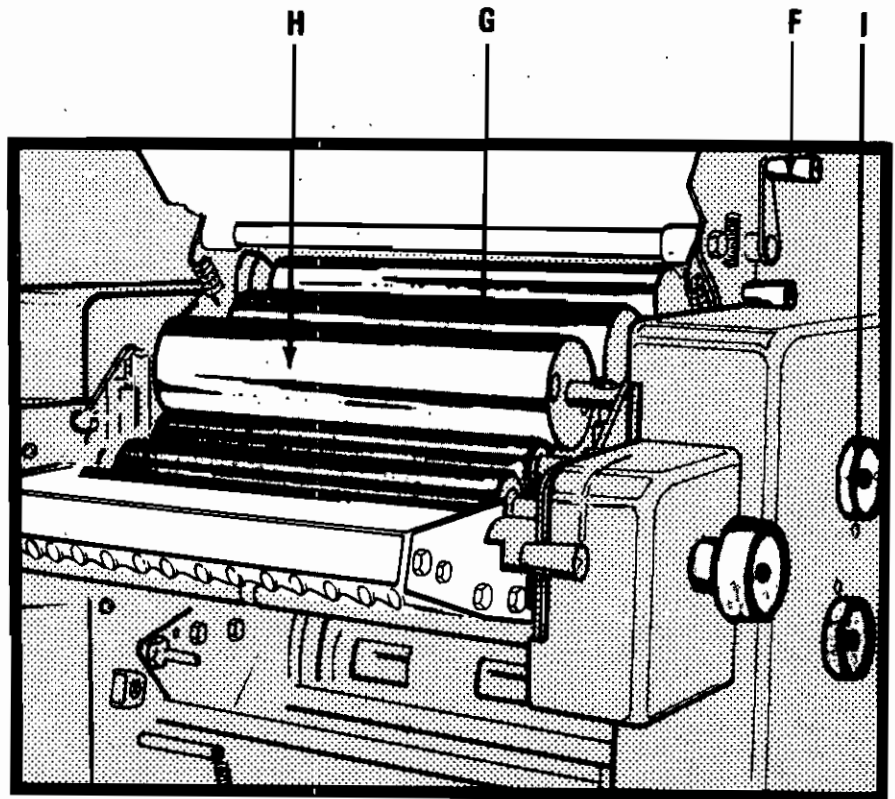
13. Remove the Aquamatic Oscillator Roller (G).

14. Lift and tilt the ink oscillating roller toward the ink fountain so it does not contact any other roller (H).

15. Move the operation control lever to **NIGHT LATCH** and turn the upper form roller knob to the "OFF" position (I).

16. Remove the Aquamatic tray to thoroughly clean it, as paper lint from the inking system settles in the Aquamatic tray. To remove the Aquamatic tray; (a) Loosen and remove the two knurled knobs (J). (b) Lift the tray up and away from the ink system. After cleaning, replace the tray and tighten the two (2) knurled knobs.

To keep the finish clean, apply A.B. Dick Hand Cleaner, Product No. 4-4938 to stained areas and let it stand for a few minutes. Rub the area in a circular motion and remove the residue with a damp cotton pad.



WARNING: Glaze Remover is combustible. Do not use near fire or open flame and avoid prolonged skin contact. Also, provide adequate ventilation.

Apply Glaze Remover 4-4978 once each week. Glaze on the rollers will cause them to lose their affinity to ink. This occurs when the rollers become covered with a thin layer of hardened ink, fountain solution, blanket wash and/or paper lint. To prevent this condition from occurring, follow the procedure below inserting it just after Step 11 in the Nightly shut-down instructions.

1. Attach a clean clean-up mat.
2. With the machine running, and the operation control lever in **NEUTRAL**, apply glaze remover to the rollers a little at a time (through opening in cover) until the rollers are thoroughly wet.
3. Run the duplicator about five minutes, keeping the rollers wet with glaze remover.
4. Turn the control lever to **INK** and run until the ink rollers are dry. Stop the duplicator and attach a fresh clean-up mat.
5. Place the control lever at **NEUTRAL** and apply a small amount of Ink Roller Conditioner 4-4976 to the ink rollers. Allow it to work into the roller system for two minutes.
6. Set the control lever at **INK** and continue to run the duplicator for another five minutes. Add more conditioner as the rollers become dry.
7. Attach a new clean-up mat and apply Roller Cleaner and Blanket Wash to the rollers to remove any remaining conditioner. Remove the clean-up mat.

Tips for Running Special Jobs

Envelopes, Post Cards, Punched/Perforated Stock

Envelopes and post cards can be printed without the use of any special attachment. Simply follow the usual paper feed procedure. The paper feed mechanism should be set up so that the greatest possible number of suction feet are used to feed the stock. If the feed table does not raise fast enough, rotate the Dual Feed Speed Control 180°.

It is advisable to reserve a blanket to be used only with envelopes or card stock. Low spots on the blanket may occur from running cards or envelopes, causing a weak copy area when running full size copy.

When feeding punched or perforated stock, if the suction feet fall over a punched hole or a perforated line, turn the valve to the horizontal position.

Color Work

Always clean all ink rollers and the ink fountain thoroughly before changing to a different color ink. When changing from black to a light color ink (especially if a long run is being processed), it is advisable to ink the machine with white ink and then clean the machine again before adding the color ink. This will insure a true reproduction of the color you plan to use.

When using color inks, you may find it necessary to increase or decrease the Aquamatic control and/or the ink fountain settings to compensate for the differences in inks. The best copy is obtained by using the minimum amount of ink and fountain solution needed to obtain good color strength.

Two-sided Work or Two Colors on One Side

Allow the first side or color to dry thoroughly. Be sure the paper is properly jogged before beginning the second run. If fast drying ink is used, do not allow it to stay on the idle rollers more than a few hours.

Removing and Attaching the Blanket

1. Remove the power cord.
2. Raise the safety cover over the cylinders.
3. **Loosen and remove** the two socket head cap screws (A) that secure the top blanket bar. Holding the bar in your right hand, turn the handwheel counterclockwise. Continue to hold the blanket taut until the bottom blanket bar is accessible. Loosen and remove the two socket head cap screws to remove the lower blanket assembly.
4. Remove the screws from reverse side of the bars to release the blanket. Attach a new blanket to the bars.
5. With the blanket right side up, locate a blanket bar in the channel at the lower end of the blanket cylinder and secure it with two socket head cap screws.

6. **Holding the free blanket bar** in your right hand, and with the blanket held tightly against the cylinder, rotate the handwheel in a clockwise direction. Keep the blanket positioned evenly across the cylinder as you turn the handwheel.

7. Place the top blanket bar into the channel at the lead-end of the blanket cylinder and secure it with the two socket head screws.

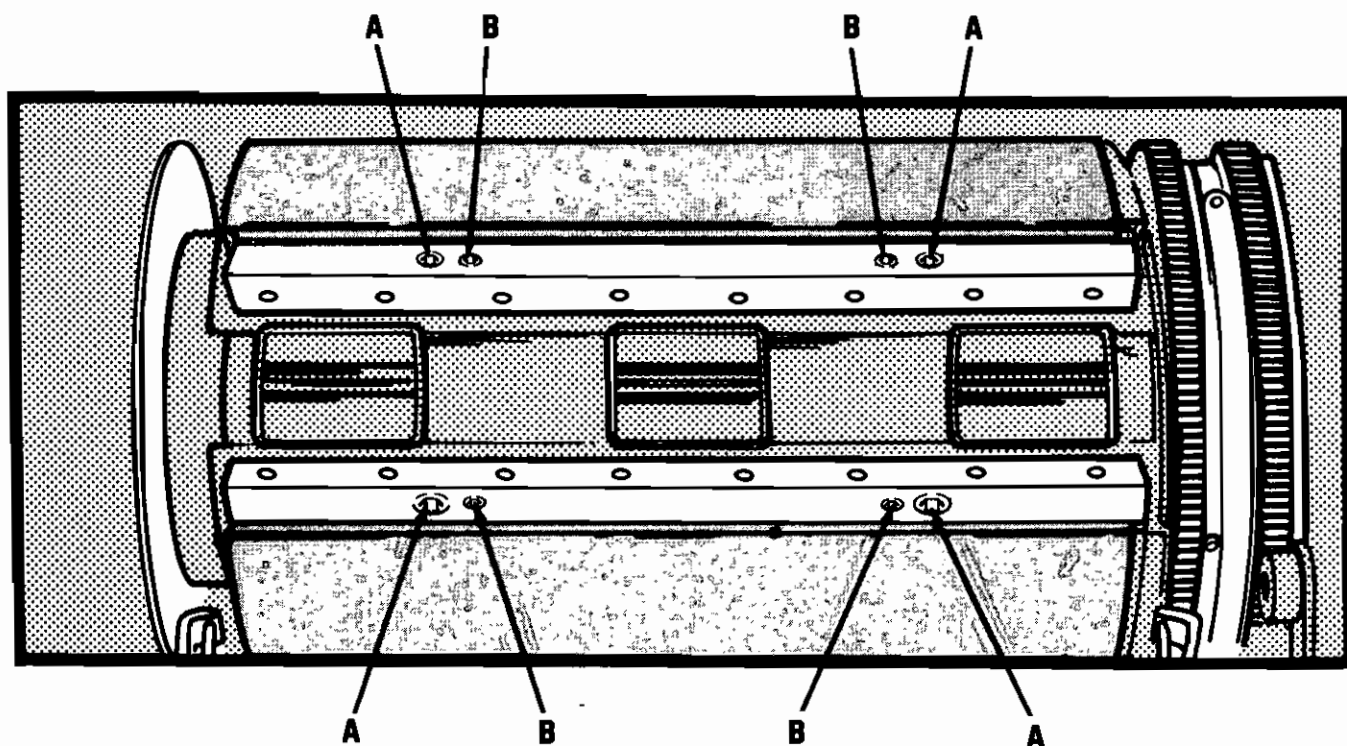
NOTE: The lower blanket bar may need to be loosened slightly to allow the bar to be inserted into the channel.

8. Loosen the four set screws (B) on the two blanket cylinder bars and tighten the four socket head cap screws (A) evenly. Then tighten the four set screws.

9. Run 200 sheets of paper through the duplicator and repeat Step 8.

NOTE: The blanket should be checked regularly for tightness to insure copy quality. (See: Care of offset blankets.)

10. **When the blanket** is mounted on the cylinder and drawn tight, there is slight tightness, or gauge, reduction. If tension is not applied uniformly across the entire width and length of the blanket, the gauge will not be uniform. This will result in premature damage. Over-tightening will cause the blanket surface to become uneven or cause the end loops to pull out. If the blanket is too loose, copy quality will suffer. The usual sign of a loose blanket is a ghost image on the finished copy. Follow the recommended blanket installation procedure.



Care of Offset Blankets

A.B.Dick offset blankets are manufactured from high quality synthetic rubbers, bonded to a canvas back to provide strength, and sealed at the edges to prevent seepage of blanket wash between layers. The great care exercised in manufacturing to exacting tolerances can be nullified by careless installation and improper care. Rubber blankets will not perform satisfactorily if they are not used and serviced properly.

Ink Glaze

The blanket is covered with a thin layer or mixture of hardened ink and cleaning solutions which has dried on the surface and possibly in the pores of the blanket. Eventually the condition would develop into a visible glaze.

WARNING: Blanket Wash is either flammable or combustible. Do not use near fire or open flame and avoid prolonged skin contact. Also, provide adequate ventilation.

Clean the blanket thoroughly with Roller Cleaner and Blanket Wash 4-4315 and wipe it dry. Saturate a cloth with Glaze Remover 4-4978 and rub the blanket until clean. Always follow an application of glaze remover with a thorough cleaning using roller cleaner and blanket wash.

Paper Glaze

The blanket is covered with tiny particles of clay, sizing, lint and other paper and/or master components. In some cases, this condition can be identified by a visible, whitish glaze. Often it is not easily seen.

Clean the blanket thoroughly with Roller Cleaner and Blanket Wash 4-4315 and wipe it dry. Saturate a cloth with Ink Roller Conditioner 4-4976 and rub the blanket until clean. Always follow an application of ink roller conditioner with a thorough cleaning using roller cleaner and blanket wash.

If it is difficult to identify the problem, use both cleaners, first glaze remover and then ink roller conditioner. Clean the blanket thoroughly with roller cleaner and blanket wash after using each cleaner.

If the blanket tends to become tacky during the middle of a run, clean it thoroughly with blanket wash. Wipe the blanket surface dry and then apply blanket powder. If the tackiness persists, remove the blanket and clean it thoroughly with blanket wash, glaze remover and then again with blanket wash.

When a blanket must be removed, and has been cleaned by any of the previous methods, wipe the surface of the blanket dry. Apply a liberal quantity of blanket powder to a cotton pad and gently pat the entire surface of the blanket, adding additional blanket powder to the cotton pad as required. After the surface of the blanket has been covered with powder, rub it gently into the surface. Roll the blanket with the rubber side in (the backing must be clean and dry), place it in its original carton, and "rest" it for a few days. Placing a sheet of plain, clean paper over the rubber before rolling will further protect the blanket surface. Store the rolled blanket horizontally.

To get maximum life from blankets, it is recommended that they be rotated each week. Condition the blanket with blanket powder and allow it to rest a full week before again putting it into service. When repeated cleaning of the blanket is necessary (such as in short run applications), changing the blanket daily is advisable. This will give each blanket a chance to dry completely and rest from the effects of pressure, ink, and solvents. Blankets either on or off the cylinder should be kept away from heat and sunlight. They should be stored in a dark, cool place, out of direct sunlight and protected from dirt and damage.

Cylinder System

Conditioning the Cylinders

When using the short master, the masters and impression cylinders must be conditioned to repel ink.

1. Wipe the entire surface of the cylinder with a clean cotton pad saturated with A.B.Dick Chrome Cylinder Cleaner 4-4965. Apply three coats to the cylinder surface and rub each coat vigorously.

2. Wash off the chrome cleaner using a clean cotton pad saturated with water. Wipe dry.

3. Wipe the entire surface of the cylinder with a clean cotton pad saturated with A.B.Dick Blue Etch 4-1014. Remove any excess etch with a clean, dry cotton pad.

Repeat this procedure as necessary.

Ink Roller Stripping

For best results from your duplicator, it is important that the ink rollers be thoroughly cleaned every night. Ink rollers that do not receive adequate maintenance may develop three basic conditions that cause them to lose their affinity for ink so it peels off the rollers. Identifying and correcting these conditions is explained below.

Ink Glazed Rollers

Ink glaze occurs when rollers become covered with a thick layer of hard ink, fountain solution and blanket wash.

Usually, this condition can be identified by a visible glaze. This causes poor copy quality - usually broken or spotty and sometimes toned. If permitted to remain on the rollers, glaze can crack and damage roller surfaces.

Paper Glazed Rollers

The papers run on offset equipment can also contribute to glazing. Tiny particles of clay, sizing, lint and other paper components break loose and work their way up into the inking and moistening systems of offset equipment. In some cases, this condition can be identified by a visible, whitish glaze. Often it is not easily seen, but the symptoms are the same as those of sensitized rollers.

Corrective procedure for Ink Glazed and Paper Glazed Rollers

1. Use A.B.Dick Glaze Remover 4-4978 on the rollers, following the directions on the container.

2. Follow this with A.B.Dick Ink Roller Conditioner 4-4976 according to the instructions on the container.

CAUTION: Ink Roller Conditioner can cause skin irritation, rinse hands immediately with soap and water after use.

3. When the deglazing and conditioning operations are complete, the ink rollers must be thoroughly cleaned with ABDICK Roller Cleaner and Blanket Wash 4-4315 to remove the active ingredients of the glaze remover. Avoid the use of pumice powder for cleaning rollers. ABDICK 4-4983 Ink Roller Cleaner may be used on heavily glazed rollers. It is an abrasive product so it should not be used excessively. After using this cleaner, the rollers must be thoroughly rinsed with water until all traces of the cleaner are gone.

Sensitized Rollers

When fountain solution, etch and other chemicals have entered the pores of the rubber, the rollers can become "sensitized." This condition is not visible when the rollers are clean and dry, but when fountain solution contacts the inked rollers, the sensitivity becomes evident by poor copy quality and/or stripping.

Corrective Procedure for Sensitized Rollers

CAUTION: Do not use this procedure on urethane rollers.

1. Use A.B.Dick Ink Roller Desensitizer 4-4970 on the rollers as directed on the container.

WARNING: Ink Roller Desensitizer is combustible. Do not use near fire or open flame and avoid prolonged skin contact. Also, provide adequate ventilation.

CAUTION: Do not allow desensitizer to come in contact with the plastic safety covers or any chrome parts as it will cause damage.

NOTE: In severe cases of glaze or sensitivity, the fluids may be applied to the rollers by hand (with the machine turned "OFF"), using a clean cloth and a scrubbing action. In some instances, the condition may have developed over many days or weeks and have deeply penetrated the rubber, and a fast clean-up is not possible.

Be sure to thoroughly clean the ink rollers with blanket wash to remove the active ingredients of the desensitizer.

2. Follow this with A.B.Dick Ink Roller Conditioner 4-4976.

CAUTION: Ink Roller Desensitizer and Ink Roller Conditioner can cause skin irritation, rinse skin immediately with soap and water after use. Also, provide adequate ventilation.

When machine operation is conducive to stripping, it is recommended that A.B.Dick Ink Roller Conditioner 4-4976 be used according to the instructions on the container during each regular ink roller clean-up. In short run, repetitive duplicating, it is especially important that ink roller conditioner be used as part of the daily clean-up procedure. It is also recommended that glaze remover and desensitizer be used once each week as a further preventive measure. Keep the rubber ink rollers (and all other rubber parts) free of grease and oil.

Maintenance of Aquamatic Rollers

Copper Roller Stripping

There are two principle causes of ink stripping from the copper roller: (1) poor ink coverage; and (2) lack of daily clean-up (leaving fountain solution in the Aquamatic trough overnight). It is important that ink coverage be maintained on the rollers to provide protection against fountain solution and etch. If it is not maintained, these solutions will undermine the ink and stripping will occur.

All rollers should be thoroughly cleaned each night. The aquamatic trough should be removed and flushed with clear tap water at the close of each day's production. If these procedures are not followed, fountain solution, paper lint, dust, etch, and other foreign particles will remain trapped in the ink system. As these unwanted chemicals increase in concentration, the reaction will be slow pick-up, blinded image, poor drying, roller glaze, and copper roller stripping.

Corrective Procedure

1. Drain and flush the Aquamatic trough.
2. Clean all rollers with A.B.Dick Roller Cleaner and Blanket Wash 4-4315.

WARNING: Blanket Wash is either flammable or combustible. Do not use near fire or open flame and avoid prolonged skin contact. Use with adequate ventilation.

3. Move the Aquamatic control to the **night latch** position.

CAUTION: The Machine must be turned "OFF" during Steps 4-6 and 8.

4. Moisten a cotton pad with a liberal amount of A.B.Dick Ink Roller Conditioner 4-4976 and apply **evenly on the copper roller**. Allow it to remain on the roller for three minutes.

5. Dampen a clean cotton pad with blanket wash; then add to this same pad a liberal amount of A.B.Dick Ink Roller Desensitizer 4-4970.

WARNING: Ink Roller Desensitizer is combustible. Do not use near fire or open flame and avoid prolonged skin contact. Use with adequate ventilation.

CAUTION: Do not allow desensitizer to come in contact with the plastic safety covers or any chrome parts as it will cause damage.

Apply this mixture to the copper roller lightly and uniformly. Allow it to remain on the roller for three minutes.

6. Moisten a clean cotton pad with blanket wash and **lightly** wipe the copper roller. This is to remove any excess desensitizer.

7. When dry, ink up the copper roller. Make certain it is thoroughly inked.

8. Add fountain solution to the trough. The rollers should maintain a uniform film of ink.

Should the copper Aquamatic roller not carry ink properly after following the above procedure, these additional steps should be taken.

1. Drain fountain solution. Use blanket wash on a cloth to remove ink from the copper and ductor rollers.

2. Fill the Aquamatic trough to the normal level with A.B.Dick Ink Roller Conditioner 4-4976.

CAUTION: Ink Roller Conditioner can cause skin irritation, rinse with soap and water after use.

3. Move the Aquamatic control lever to the "OFF" position and turn "ON" the drive motor. Allow the copper fountain roller and ductor roller to mill in the conditioner for at least ten minutes.

4. Drain the conditioner from the trough. This material may be saved and reused until it becomes quite cloudy. Clean both rollers and the trough with blanket wash.

5. Re-ink the copper and ductor rollers in the normal manner. It is very important that all low spots in the rough-surfaced roller receive ink.

6. Replace the fountain solution in the Aquamatic trough. The copper roller will now maintain an even film of ink.

The A.B.Dick Maintenance Agreement

For over 100 years, A.B.DICK Company has been a leader in quality communication products, including mimeograph, copier, offset duplicator; and information systems equipment, supplies and service. You purchased your new A.B.DICK equipment with the assurance that it would provide you with the reliability and dependability associated with A.B.DICK's reputation in the marketplace.

Like your automobile, A.B.DICK copier products require maintenance to provide maximum efficiency and equipment life. The professional maintenance service that you receive when you purchase an A.B.DICK Maintenance Agreement can prevent costly breakdowns through inspections, lubrication, and cleaning. A.B.DICK Company employs only expert technicians who are not only able to maintain your equipment in optimum operating condition, but who can also recognize and correct potential trouble **before** it occurs.

If you would like information on the variety of maintenance agreements A.B.DICK offers, please contact your local Service Department. An A.B.DICK Representative will be happy to discuss the various maintenance options available to you and to help you select the agreement that best suits your needs.